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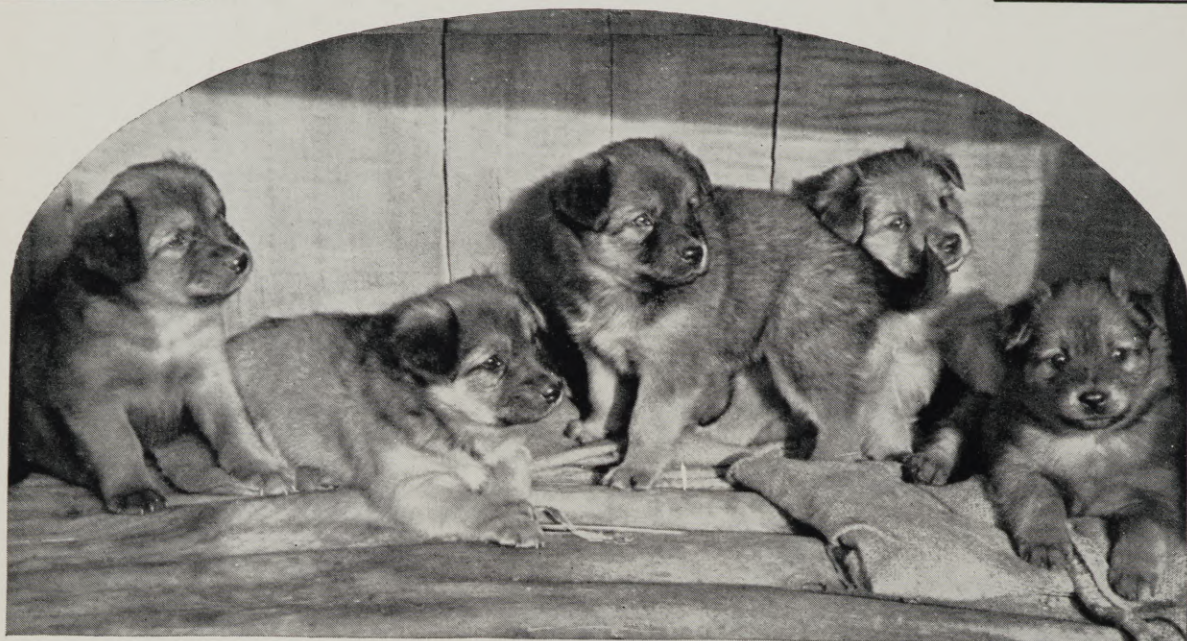


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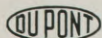
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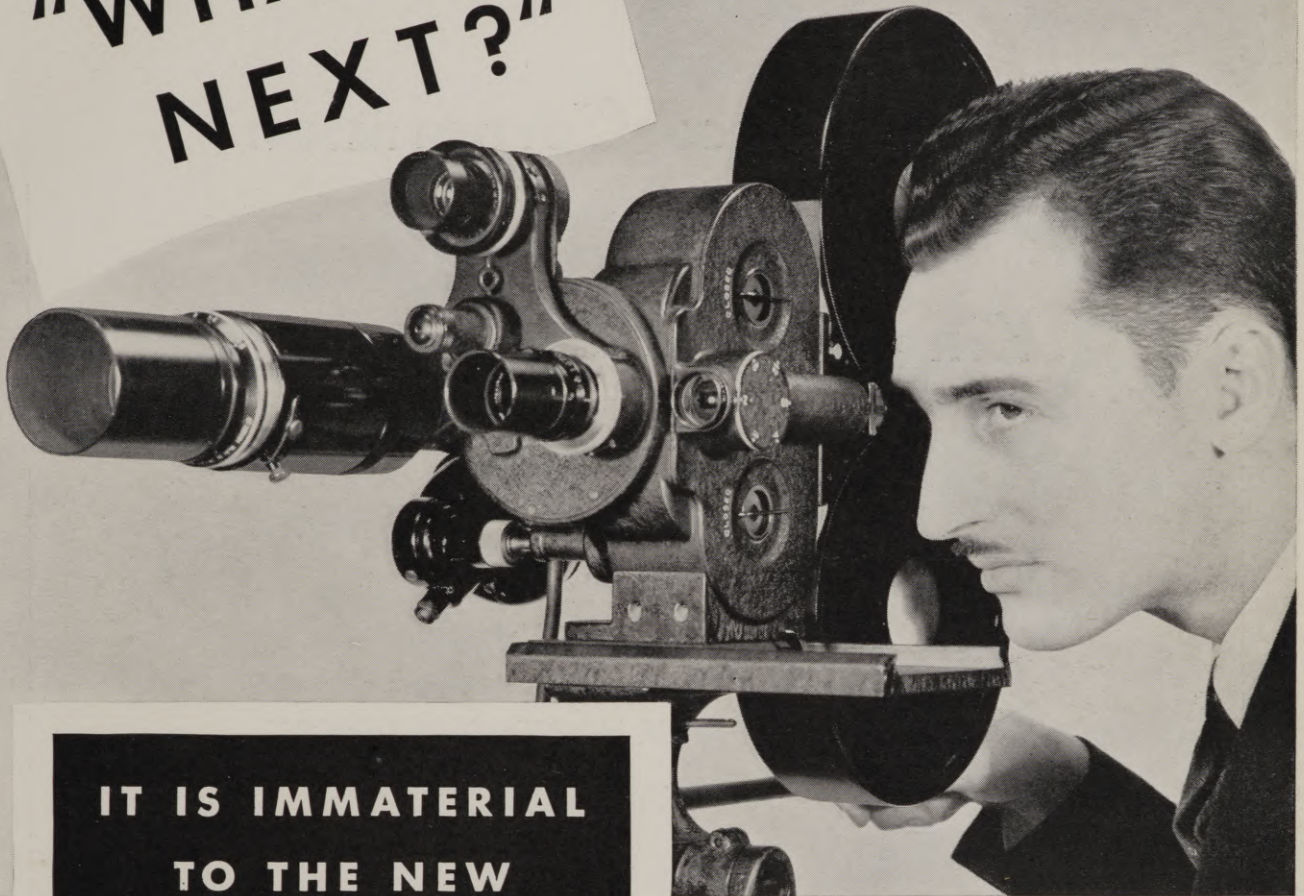
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THE AMERICAN SOCIETY OF CINEMATOGRAPHERS was founded in 1918 for the purpose of bringing into closer cooperation all those leaders in cinematography who strive for preeminence in artistic and technical leadership; to further the advancement of the cinema and its allied crafts through unceasing research and experimentation as well as through bringing the artists and the scientists of cinematography into more intimate fellowship. Its membership is composed of the outstanding cinematographers of the world, with Associate and Honorary memberships bestowed upon those who, though not active cinematographers, are engaged none the less in kindred pursuits, and who have by their achievements contributed outstandingly to the progress of cinematography as an art and as a science. To further these lofty aims and fittingly to chronicle the progress of cinematography the society's publication, The American Cinematographer, is dedicated.



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BY THE SOUNDING SEA

By GEORGE BLAISDELL

GREAT TOWN is that San Diego. It's not so large either in numbers or area. Seven years ago its population was around 148,000. It has leaped since then to over 165,000. What impresses the visitor is that it is up and going. The newer business buildings have a metropolitan look.

As a case in point, intimating to mine Host Teague of the Churchill what has just been hinted here, it was suggested the buildings remind one of New York. "There's one across the street," the reporter went on, "that might have been lifted out of the big town," he said.

"It really should look that way," was the smiling response. "It was New York capital that built it."

The Bank of America has a structure in Broadway that seems to match anything in a business building way that Los Angeles can bring into comparison. And there are several hotels that will rate with the largest in towns much heftier than San Diego.

Balboa Park is a thing of beauty. Its chief charm is the great organ, the largest of the pipe variety ever built, housed in a pretentious structure 45 feet deep by 70 high and 80 wide, according to a rough estimate. Whatever amplification may be needed certainly is provided.

Rare Setting

The setting is picturesque in the extreme. Extending from the left and right sides of the organ house in quarter-circle fashion and serving as the spearhead for the shortened oval of the great open air auditorium are colonnades sheltering a few settees. Ringing the whole are groves of giant eucalyptus trees ranging in height up to 150 feet, their tops bending under a gentle 10 o'clock Sunday morning breeze.

The sky is cloudless. The temperature as it is proved later is 70. The humidity seemingly is nil. Here is a ready-made answer to the query that has stumped so many youthful of all ages: What so rare as a day in June?

It could be only a day in September—in San Diego.

Preliminary to the concert of choir and organist in the afternoon a tuner was at work on the organ. Exasperatingly did he hold notes and run scales. Then came a man who with apparent authority threw books of

music up in front and sat at the organ. Then he pulled stops and held notes.

If he only would run but just a bit of some familiar strain. If he failed it was a case of one alternative or another: Walk out on him or go to sleep. Alibis for the latter action were multiplying. The balm that rode on the crest of that breeze from the old Pacific was overpowering.

Like a thunderclap came a couple of bars from "Faust." Gone was all thought of sleep. Alertness succeeded lethargy. There was a sense of respect for the municipality that could provide for its citizens and their guests such a public institution as the one we were enjoying.

Real Thing Unbeatable

The concert by choir and organ in the afternoon was one worthy of travel a distance to sit in on. The sound could have been measurably transmitted by radio. Seemingly,

though, it will be ages before any human agency can convey the accompanying setting of brilliant sun and cloudless sky, of balmy air and woodland atmosphere, of fellow humans under a spell.

On the Saturday afternoon before Labor Day there was a run down to Tiajuana, a matter of less than a score of miles. It was a first visit. Inevitably there would be comparisons with a visit to Juarez in 1915. The little town on the other side of the Rio Grande at that time was in the stress of civil strife and in unhappy condition generally. The fruit and vegetables on sale in its stores were not of appetizing appearance. They were the reverse. And these were symptomatic of the town in general.

It was different in 1937 in this other Mexican town. Fruit and vegetables had been touched by water—plenty. There was no particular difference in one respect, however.

There was plenty to drink in Juarez in 1915. There was plenty to drink in Tiajuana in 1937. Yet there was a difference, too. The only drinking done by this reporter in 1937 was of reminiscential variety, so to speak. He was thinking of Bill Winch, El Paso exhibitor, entertainer public and private extraordinary, who with his friends took this reporter and his missus under their protection for a real party.

Hunch Was Wrong

During the hour or more in Tiajuana the reporter was attracted to a policeman, standing in casual fashion on a street corner just watching. The man, apparently about thirty years, was dark and tall and slim. He looked an American, of the typical western breed, a regular second edition of Wyatt Earp, as the associates of that pioneer law officer had described him; one who would be a match for his weight in wildcats; one able to conduct a verbal controversy with a particularly bad boy without batting an eyelash—or raising his voice.

The reporter wondered. Could it be possible here was an American who for good and sufficient reasons was unable "to go back to Texas"; yet one whose prowess in altercations with fist and weapon had been recognized by the southern municipality with appointment to the peace force.

The reporter suddenly discovered the relation had changed. The scruti-

(Continued on Page 440)

TO OUR ADVERTISERS

THE AMERICAN CINEMATOGRAPHER announces that beginning with its January issue it will be increased in size from 8 to 11 inches less trim to 9 by 12 inches less trim.

The type columns will be lengthened to 10 inches. This of course will be exclusive of the usual 2 picas allotted to the running folio.

The columns will be widened from 13 picas to 14 picas (2½ inches).

The page width will be increased from 41 picas to 44 picas (7⅓ inches).

We are convinced this increase to a more standard magazine size will give our advertisers, especially those using larger space, better opportunity to tell their story and at the same time in some instances will mean definite economy for them through avoidance of having made special plates to fit our columns.

This is the first time in the seventeen years of its publication The American Cinematographer has changed the size of its page.

VICTOR MILNER, A.S.C., is the tenth president of the American Society of Cinematographers. First vice president for many years, he was elected to his new post at a meeting of the board of governors held September 17.

John Arnold, A.S.C., the retiring president, had held the position for more than seven terms. He lays down the presidency and membership on the board because of his belief that in his position as head of the M-G-M camera department he should not engage in any business regarding labor matters that may affect cinematographers.

The new president is a charter member of the society of which he has just been elected chief. More than that he was one of the active organizers and has been an officer of the body practically since its inception in 1917.

His early years were spent in New York. He was the son of a physician who had formerly practiced in South Africa, who had lived in the Transvaal during the Boer war, and to which country he afterward returned.

Milner's first work in the motion picture business was as an operator of a projection machine. It was in a show in One Hundred and Tenth street at Eighth avenue, New York. Nickelodeon was the descriptive term applied to the store converted to theater purposes.

The equipment was of the primitive type and the machine hand operated. Fire restrictions at the time would have prohibited the use of motors had there been any available. Pathe subjects were the leaders in screen entertainment. Each thousand-foot reel carried a number of subjects, ranging from 50 feet in length. The average was perhaps four or five subjects.

Daily Changes

It was a daily change. The operator did the selecting and a couple of days a week would go to the exchanges.

Among the brands at that time besides Pathe were Gaumont and Melies, both French; and there were Italian and other European firms represented in the open market.

Vitagraph was one of the manufacturers beginning to get its teeth into the film world. This was a Brooklyn company, of which William "Pop" Rock was the president and Smith and Blackton the other owners. Rock was the business representative, and the A.S.C. head remembers him now as sporting a huge diamond, such as the showman of other years affected. The exchange managers always were very cordial to operators, as is usually the case with seller and buyer.

MILNER ELECTED PRESIDENT OF ASC

The young Milner found abundant opportunity while projecting his films largely consisting of scenics and comics to examine his prospects for the future. He decided the better field would be in photography.

Eberhard Schneider conducted a manufacturing business at Twelfth street, New York, near Fourth avenue. He was one of the leading manufacturers of cameras, perforators, printers, etc. With Schneider the lad decided he would become connected. The fact the manufacturer had a full crew of mechanics, or that being a thrifty businessman he naturally would be disinclined to hire employees he did not need, these and other factors made no impression on the determined lad.

Makes Good

He haunted the manufacturer and recited the tale that he was the only person in New York qualified to become an Eberhard apprentice. Possibly to be free of the lad's importunities the employer finally agreed to let him try it for three months. If in that time he made good there would be a job for him. It was done as it was said.

In less than three months the newcomer was being taught photo-chemistry, laboratory work and the use of the motion picture camera. So it will be understood by the industry and those of the amateur division as well that the new president of the A.S.C. came to his position from the bottom of the ladder. It was no royal road, but it was a sure one, and it gave the young Milner an insight into the mysteries of his craft denied to many of his fellows and proved of incalculable benefit to him in later years.

As the apprentice merged into master he was sent around the world with a camera. Probably he was the first to be so designated, certainly as an American cameraman.

Motion picture history was made fast in those days. On his return from his world trip Milner was sent to photograph the first feature length picture, to be made from Longfellow's "Hiawatha," by Frank E. Moore. It was done in five reels and was acted by Seneca Indians around Lawton's, N. Y., near Lake Erie.

When the picture was completed

the negative was returned to the laboratory of Eberhard Schneider for the manufacture of the prints. Here the cameraman was assigned to do the laboratory work on the film. Working with him was Miss Margaret, daughter of the proprietor of the plant (please keep that name in mind). Between the two they tinted the film complete.

Wanderlust

Of course we know there is a revival of interest in tinting and toning, just as there had been another prior to the introduction of sound. Perhaps it now will be recognized that the continual reversion to tinting and toning is but another manifestation of the human being's revolt against the deadly black and white.

Of course, there will continue to be those who will decry the alleged minimized definition in color, just as there will be those who can see no other standardized future until color is accepted, but as long as black and white is used it is likely tinting and toning will ride with them.

When the laboratory work on "Hiawatha" was completed the broadened Milner was seized with an attack of wanderlust. Nothing could be expected to satisfy that longing quite so effectively as membership in the corps of Pathe News cameramen, then registering as high as five members. The service was under the editorship of E. L. Franconi, assisted by Emanuel Cohen, later to become editor of Pathe News and then a Paramount producer and in turn to make his own pictures.

The years of 1912, '13 and '14 were hectic days, with five men trying to cover the more important events in the United States, a large job, geographically speaking.

It was during these years the A.S.C. executive again figured in one of the major developments of the new industry, that of the creation of what is now the newsreel service.

On numerous occasions Milner had been enabled to slip still pictures to William G. Shepard of the United Press, who on one famous occasion indisputably established his claim as a regular newspaper guy. That was when he scooped the world on the in-



VICTOR MILNER

tervention by the United States in Mexico.

The fraternization between Milner and Shepard led eventually to the tying up between Pathe and the news services whereby the newsreel organization was tipped off on the happenings it wanted to secure for the screen.

There Is a Wedding

Following several years on the Pathe News there was a wedding in the Milner family. The bride was Miss Margaret Schneider, who on her own account knew more than a little about the mysteries of photography. She even knew a lot about tinting and toning.

When the destination of the honeymooners was discussed it was decided it would have to be California, already going strong as a manufacturing field for motion pictures. In California the bridegroom met up with Georges Rizard, a member of the Cinema Camera Club, an organ-

ization out of which the A.S.C. later was to develop.

Rizard convinced the bridegroom that opportunities in studio work already far outranged those to be found knocking about the world in newsreel work. The advice was followed by obtaining a situation for him at the Balboa studio in Long Beach.

Milner had no illusions as to his deficiencies for screen dramatic productions. He made every effort so to educate himself that he could get out of the rut. Work was possible because cameramen were scarce, Milner himself having enjoyed far more opportunities than the vast majority of his fellows.

Quality was almost unknown, and cameramen were being educated at the expense of the studios. There was a chance to join Joe August, A.S.C., as second on Bill Hart productions. Milner disagreed with the general who said he would rather

be first in an Iberian village than second in Rome. Without any hesitation he accepted a chance as second with August, knowing that he would profit by the experience and the affiliation.

Then came an opportunity to go to Universal. There he coaxed John E. Seitz, A.S.C., later to be president of the society, into permitting him to help photograph "Scaramouche." He had realized this man whom he so highly admired could give him advice and training that would be invaluable. The eventuality justified his conviction.

Wins Academy Award

Then after a term with the Norma Talmadge studio he transferred to Paramount. That was about thirteen years ago.

It was at that studio he was given the Academy award, for his photography on "Cleopatra." He has been runner-up for others.

Asked as to his own favorite among the pictures he has photographed President Milner quickly named "The General Died at Dawn." His regard for Lewis Milestone, director of that picture, came to the surface with his decision. He characterized him as always being desirous of getting mood into photography, the mood of the story, to the benefit of the picture and every factor that surrounded it—even to the not inconsequential one of boxoffice.

The new president of the A.S.C. never has been in doubt from the beginning of his motion picture camera experience that the welfare of the cinematographer rests in a united organization—in a body that seeks in every legitimate and honorable way to advance him through the stages of apprenticeship and craftsmanship to the realm of the artist; to a body that loses no opportunity permitted by sound ethics to make the industry and the world at large conscious of the cinematographer's important position among the greater of the screen's contributors.

And so the man who even reads as he runs may reach the conclusion the new president of the American Society of Cinematographers is not in his place by any accident of politics; will concede he has earned his high honors by long and hard work; by seeking the benefit of association with those master craftsmen competent—and willing—to teach him and in turn giving him the privilege of bestowing that knowledge on those who are coming and are still to come.

His friends predict President Milner will make a worthy successor to a line of men who have brought distinction on themselves and their society.

REACTION ON MAKING HIS FIRST COLOR PRODUCTION

Veteran Cinematographer Discusses
Experiences in Filming 'Tom Sawyer'

By JAMES WONG HOWE, A.S.C.

FOR more than forty years cinematographers have been seeing color in terms of black-and-white rendition. Today, as cinematography in natural colors comes increasingly to the fore, we must teach ourselves to see color as *color*.

This is perhaps my paramount reaction as I find myself engaged in photographing my first Technicolor production. Being just at the threshold of getting acquainted with color cinematography, I hesitate to write so prematurely of my experiences; only the hope that these notes, written while the transition from monochrome to color is still under way, may be helpful to others making, as increasingly many of us must, the same transition emboldens me to do.

For the last eight or more years, cinematographers have considered color strictly in terms of its normal monochromatic rendition by normal panchromatic materials. In other words, the actual colorings of any two parts of the scene were of little

importance so long as their rendition in black-and-white was satisfactory for our composition.

Now that we are dealing with color on the screen as well as on the set we must learn to see these colors consciously. Flecks of coloring which in a black-and-white picture would form part of a neutral background can in a color-picture prove enormously disturbing to the best composition.

There is nearly always some means of avoiding these disturbing colors, by changing the camera-angle, the lighting, or by spraying the offending area; but to be avoided, the color must first be seen.

Avoid Exaggeration

While it is necessary that the cinematographer become definitely color conscious, it is equally vital that this color consciousness should not be exaggerated. When working with color it is all too easy to become so color conscious that you force

color into scenes and places where it should not be, thereby defeating the effect of naturalness you are striving to build up.

Any type of cinematography involves the coordination of two basic elements: the players and their background. In black-and-white cinematography, the background, while vastly important, is generally selected and lit so that it remains a neutral background against which the players can move.

Highlights and Shadows

In other words, we generally try to avoid strong highlights or strong shadows in the background, which might draw the eyes of the audience away from the more important players.

In natural color cinematography we must learn to place background color in the same category as such highlights. A splash of red or blue in the background of a color shot can distract audience attention in exactly the same way as a strong highlight does in monochrome.

Therefore in my current production, "The Adventures of Tom Sawyer," I have tried to subordinate background color and to keep the major part of any scene's coloring confined to the players. This has in practice worked out very successfully; and it is not nearly as difficult to do as might appear.

Black-and-White Sets

In this respect, we have been fortunate in one early accident which would ordinarily appear to have been a serious handicap. The production was designed as a black-and-white production. It was, in fact, well under way in monochrome when a decision was reached to film it in Technicolor.

As a result, we have been working with normal black-and-white production settings and costumes. These have not been changed in any major detail; they are precisely what would



James Wong Howe, A.S.C., Director Norman Taurog and "Gaffer" James Poitevin Technicoloring a scene from Selznick's "The Adventures of Tom Sawyer."—Photos by William Wallace.

be expected for a monochrome production of the same story. Yet we have been using them for color with excellent results.

In many ways, I think we have got better results this way than we would had sets and costumes been planned for color.

As it is, their coloration is approximately what would be natural for that place and period; had they been deliberately designed for color, there must inevitably have been temptations to insert color here and there simply for the sake of color, rather than because it should naturally be there.

Coordinating these two elements with lighting offers new and interesting possibilities, but it also calls for a new approach to the problem of lighting. The actual increase in illumination as compared to black-and-white is relatively unimportant; I am at present using about twice as much light as I would use for the same scene in monochrome.

This increase is not in the number of lights, but in the intensity of their beams. If, for a color shot, I use a Mole-Richardson Side Arc with two silk diffusers to light a given area, I would in monochrome use a comparable incandescent broad with four silks for the same purpose.

If for spot-lighting I use a 65-ampere H. I. arc I would in black-and-white use an incandescent Junior Solarspot for the same purpose, but with the beam flooded out rather more.

Soft Lighting for Color

Every cinematographer has his individual preferences in lighting, and every cinematographer will, when he comes to Technicolor lighting; determine for himself the technique he likes best.

Already, some cinematographers favor lighting Technicolor very flatly, while others favor even more brilliant lighting than they would use for black-and-white.

Personally, I favor a soft lighting for color, with the modeling done softly and subtly rather than strongly and obviously.

Those of us who have studied the methods of the Old Masters of painting will recall that they achieved their modeling in many cases, not with the direct sunlight that corresponds to our spotlighting, or by using a featureless flat lighting, but by using what might be termed a "directed" north light for the modeling light.

I have been striving, with good success, for the same results using diffused Side Arcs for my modeling light. In larger shots it is of course

sometimes necessary to use the projected beam of an H. I. Arc for this purpose, but even so I retain a considerable amount of diffusion, and wherever possible I use Side Arcs.

The present trend in monochrome lighting is toward having most if not all of the light come from above, projected by spotlights. However satisfactory this may be for black-and-white, I have not found it gives natural results in color.

It is probable that many more experienced color cinematographers may disagree with me, but personally I have found that the most natural effects come when the majority of the lamps are at approximately the level of the camera, with a bare minimum of fill-in and backlighting from units above.

Natural Separation

This question of backlighting in color is another thing that demands modification of usual techniques. In black-and-white we use back light and rim light to outline our characters so that they will stand out from their backgrounds. This is seldom

necessary in color, for we have inherent color differences to serve the same purpose.

In one sequence of my present picture we had a scene showing young Tommy Kelly, who plays Tom Sawyer, walking atop a picket fence balancing a feather on his nose, to impress his sweetheart. The camera angle was such that Tommy's head moved against the open sky. In monochrome, the boy's hair and the sky would be rendered in very similar shades of gray.

Instinctively as we prepared to photograph the scene I arranged back lighting to outline the head and separate it from the sky. After the first take, it suddenly dawned on me that this was a color picture, and on the screen the sky would be blue while the boy's hair would be light brown, giving a natural separation. In the next take I eliminated the rim lighting. On the screen this latter take was far more pleasing.

Where backlighting—or any strong highlighting—may for any reason be necessary it is important to remember



Modeling rim-lighting is necessary for black-and-white in a scene like this: in Technicolor natural color contrasts provide adequate separation.—Photo by William Wallace.

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that one of the few remaining limitations of the process is the fact that strong highlights show a tendency to become "washed out" in the printing. Therefore if such highlights must for any reason be used, they must be softened until they no longer produce this color-destroying glare but remain merely to suggest a highlight.

Simplifying Color

Approaching color from this viewpoint, lighting can be tremendously simplified. Consider, for instance, one recent shot of Tommy Kelly and May Robson. In lighting this shot I used only five lamps. They were a diffused Side Arc for my key light, placed at the right of the camera; another Side Arc, diffused with about three silks, at the other side of the camera to complete my primary personal lighting.

On the wall behind the camera was one Scoop, slightly diffused to give a general lighting on the set. Shining through a window on walls behind the players was one 65-Ampere H. I. Arc spotlight, which produced decorative shadows.

Finally, on the lamprail behind the players was one 90-ampere H. I. Arc, diffused and flooded, to give merely the faintest suggestion of a highlight on the players.

In this you will notice that I concentrated most of my lighting on the players, definitely subordinating the background. This treatment, I have found, gives the most natural results.

The same general treatment is equally effective for exteriors. In general, I like to keep the direct sunlight away from the players, diffusing it with overhead scrims. I then effect my modeling with either reflectors or booster lights—more frequently the latter. Arc booster lights have many definite advantages over reflectors.

Effect Lighting

First of all, as my Technicolor associate Wilfred Cline pointed out early in the production, arcs as they are now used in Technicolor are far easier to face than any reflectors, so that the players have less trouble keeping their eyes open naturally.

Secondly, in reflecting sunlight, reflectors also reflect other things, as for instance some of the blue of the sky, the green of large masses of foliage, or the red-orange light of the sun late in the day. The Side Arcs and H. I. arcs used in Technicolor are accurately matched to the north light standard, and their light is therefore colorless. Thirdly, of course, either Side Arcs or H. I. Arcs used as booster lights are far more controllable than any reflectors.

The question of effect lighting in



This scene from "Tom Sawyer" shows that simple, low-key lightings are as practical in Technicolor as in black-and-white.—Photo by William Wallace.

color is one that has only begun to be explored. The possibilities seem boundless. In "Tom Sawyer" we have had reason to portray a wide variety of light effects, including normal daylight, late afternoon, exterior and interior moonlit night scenes, and interiors lighted by oil lamps, candles and torches.

The ease with which we can obtain these effects with existing equipment and our really limited knowledge of color cinematography is amazing.

Subtlety in Color

It is significant of the subtlety needed in lighting color that these effects are most successfully achieved by suggesting them rather than by painting them with bold strokes. In general, it seems best to light the scene in a fundamentally normal manner, and then add faint touches here and there to suggest the desired effect.

All of these effects other than normal daylight are based on some change from the normal color of lighting. Natural light in the late afternoon actually takes on a warm yellow-orange tinge; lamplight, candlelight and torchlight also partake of these warmer tones, while moonlight calls for a glint of steely blue.

The warmer tones are secured very simply by using conventional Junior and Senior Solarspots with over-volted or photoflood type globes of the correct power instead of the usual incandescent globes. Moonlight effects are produced even more simply, by merely removing from the H. I. arc spotlights the light straw-colored

filter which corrects their beam to the north light standard.

Use Beams with Care

These colored light beams must be used with great care, however. I have not as yet found an instance where they can be used indiscriminately throughout a set. Instead, they should be used only here and there, to give a little glint suggesting the warmer or bluer tone, while the rest of set and personal lighting remains normal.

In some instances, it may be advisable to use these colored lights for illuminating all of the set, and even for illuminating the figures of the players. But as long as one is striving for an illusion of naturalness, it seems to be a fixed rule never to play one of these colored lights directly on the face of an actor, for that somehow introduces a note of artificiality.

This rule would probably not apply in photographing a melodrama like "Frankenstein" or "Dracula," in which the weird impression could be heightened by deliberately playing, say, a blue or green light on the unnatural character. I would enjoy doing such a picture in color.

But for normal effects, low key lighting in Technicolor is every bit as possible—and as effective—as in black-and-white. Here I would like to encroach once again upon the art director's field. Light sets are definitely an advantage in color, for they may be controlled as easily as they are in black-and-white, by regulating

the intensity of light falling on them.

The sets for "Tom Sawyer" were as I have said, designed for black-and-white photography, and remain fundamentally unchanged in the color production. Accordingly, many of them are in relatively light colors, while if the production had been designed for color from the beginning I have a suspicion that many of these same sets would have been darker.

Favors Light Colors

Judging by my own experience and from what I have seen of previous color productions, I think these lighter sets have photographed much more effectively than they would had they been darker; and certainly they helped us to use a more normal volume of light.

In closing, I would like to express my sincere appreciation for the whole-hearted cooperation afforded me in this, my first Technicolor production, by my associate Technicolor cinematographer, Wilfred Cline, and by all of the Technicolor personnel.

While Technicolor has advanced to the point where an experienced black-and-white cinematographer need have no undue fears at undertaking the

direction of photography on a Technicolor film, the average cinematographer would ordinarily enter upon his initial color production with the advantage of a period of studying the process and making color tests beforehand rather than, as I did, making but one brief Technicolor test and then finding myself launched on an important production.

The cooperation of the capable Cline on the set and of the many unpublicized individuals in the Technicolor laboratory and offices have been truly invaluable both to the production itself and to me as an individual.

A world of credit also is due to another group of experts whose behind-the-scenes activities have done much to make modern Technicolor photography what it is today.

These are the engineers who designed and built the Mole-Richardson are lighting equipment which was developed especially to meet the lighting problems of Technicolor. One of the first things needed to make the new Technicolor practical was modern lighting equipment, and so capably have the M-R engineers succeeded in this that today the lighting

equipment on any Technicolor set is more modern and more efficient than that used on most black-and-white sets, and consequently the cinematographer's lighting problems are simplified.

There is no doubt about the fact that color is coming as a major production medium. I have no hesitation in predicting that within the next four or five years at least 50 per cent of all major productions will be in color.

Credit to Engineers

For obvious reasons, the photography of these films will be directed by the same men who are directing the photography of today's outstanding monochrome productions. Therefore more and more of us will find ourselves making the transition to color.

And between the basic simplification of the process itself and the earnest cooperation afforded by all these experts in and associated with the Technicolor organization, this transition will be increasingly easy and natural for cinematographers who prepare themselves beforehand to accept color with an open mind.

COUNCIL MAY CHANGE PROJECTOR APERTURE

THE size of the picture on the screen of practically every motion picture theatre in the world may be changed as a result of action taken by the Research Council of the Academy of Motion Picture Arts and Sciences.

In order more closely to coordinate studio and theatre practice and to be sure that all of the action photographed in the studios reaches the theatre screen, and to minimize the possibility of cutting off heads and feet from the picture on the screen, the council has taken the first steps toward a revision in the dimensions of the Academy standard projector aperture adopted in 1932 and now in use in the theatres.

The past several years' use of the standard has indicated that a revision in the aperture dimensions would be advantageous from several viewpoints. After an extended series of tests in the studios and theatres, the committee appointed by the council to consider the matter has prepared a revised standard projector aperture which in the main differs from that in use at the present time by a .015-

inch increased height and .021-inch increased width, and is centered over the camera aperture.

These proposed revisions will be advantageous to the studio in that cameramen will be able to compose a scene uniformly so that ordinary production shots will exactly fit in with all types of composite and process shots, and because of the identically centered camera and projector aperture will facilitate the making of titles and various special effect shots.

The limited framing tolerance will be advantageous in the theatre in that the possibilities for cutting heads and feet off the screen will be decreased, inasmuch as more of the scene actually photographed will appear on the screen of all theatres.

It is proposed that the dimensions and position of the camera aperture will remain unchanged, revisions in only the projector aperture standard now being under consideration.

It is proposed that the size of the Academy standard projector be increased from 0.600 by 0.825 inch to 0.615 by 0.846 inch and that the aperture itself be recentered to a posi-

tion so that the center lines of both the camera and the projector apertures will be identical, half of the 22 mil difference in the widths of the two apertures being equally divided on both sides of the center line and half of the 16 mil difference in the heights of the two apertures again being equally divided on both sides of the horizontal center line.

This thus moves the proposed projector aperture $6\frac{1}{2}$ mils farther away from the sound track.

The four corners of the proposed sound projector aperture are rounded, with the same radius as that of the camera aperture (31 mils).

Copies of a memorandum containing a comparison between the present standard Academy projector aperture and the proposed new Standard have been sent to all studio and commercial laboratories, studio camera department heads, studio process department heads, sound department heads, commercial color companies, trailer and newsreel producers, and camera, sound and projector equipment companies asking for comments on the proposed revised standard.

Comments and suggestions submitted by any members of the above groups will be considered by the council committee in advance of any formal action toward revising the present standard.

LINOLITE BRINGS USE OF VARIABLE DENSITY

ONE of the most critical links in the electro-mechanical-photographic chain of sound-on-film recording is the point at which the record is impressed on the film. The effective frequency range of the finest amplifying system is limited by the degree of purely photographic definition the system's exposing mechanism is able to secure on the sound track.

If this definition is faulty, the delicate gradations representing the higher frequencies will be blurred, or even lost, and the resulting record will be little better than could be obtained with a far less responsive recorder.

For this reason the introduction last year of the technique of recording with ultra-violet light was rightly hailed as a signal advance in sound photography. Recording with the invisible, shorter wave lengths of light results in a cleaner, more sharply defined track which permits the recording of a notably higher band of frequency components.

This is due to the fact that where a certain proportion of ordinary visible rays not only penetrates the emulsion layer completely but reflects from the celluloid support, giving rise to halation and consequently reducing the definition of the recorded track, the ultra-violet rays do not penetrate so deeply, and accordingly make only their primary exposure, without halation.

This "black light" recording, however, has until now been available only for the variable area type of recording, though its advantages

should be equally great for variable density records.

Variable Density Recorders

The new Linolite glow-lamp, however, brings the advantages of ultra-violet recording to variable density recorders. This unit includes not only the new lamp but also an optical system capable of transmitting these short wave rays which are absorbed by ordinary glass, and designed to coordinate as well with the remarkable linear light source of the Linolite lamp. The unit as a whole replaces the conventional glow lamp, recording slit and optical system in any recorder.

No slit is necessary in recording with this new unit. The light source in the glow tube is in the form of a line of light between fifteen and twenty thousandths of an inch in width. The optical system, which has a 30:1 reduction ratio, focuses this image directly on the film producing a line of intensely actinic light approximately .0005 of an inch in width.

Due to this construction the film is able to travel freely over the recording drum, without the potentially dangerous proximity of any slit block or other type of aperture. The lens which forms the recording image is approximately one sixteenth of an inch from the film.

High "Black Light" Intensity

The Linolite, while producing sufficient visible light for convenient visual focusing, gives forth its strongest radiation in the longer wave ultra-violet band, with peak radiation at 3800 Angstrom units. This coincides

very well with the sensitivity of the latest emulsions for this type of recording the area of highest sensitivity of which lies between 3600 A. and 4100 A. In practice, while the visual radiations of this new tube are comparable with those of conventional glow lamps, the photographic value at the same signal input is greater.

This strong "black light" emission, however, would be of no value if the optical system and the envelope of the glowtube itself were of ordinary glass, which transmits virtually none of the ultra-violet rays.

Art Reeves, its manufacturer, therefore uses a special ultra-violet transmitting glass both for the lens which forms the recording image on the film and for the envelope of the tube.

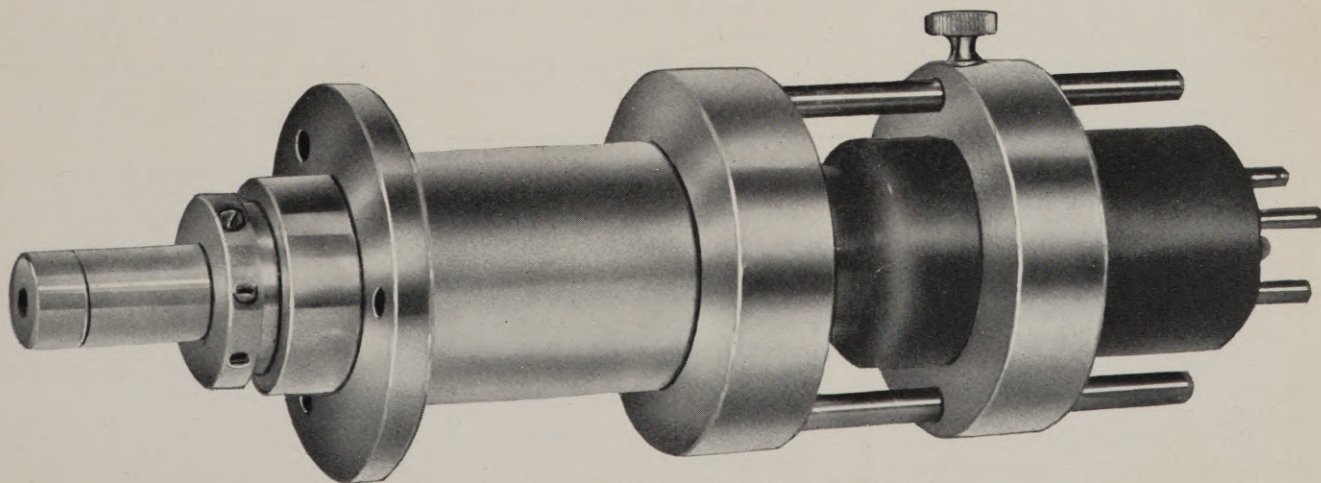
The inherent frequency response characteristic of the Linolite glow lamp makes it suitable for use with the most modern amplifying systems. Tests have shown the Linolite's response to be flat up to a frequency of 14,000 cycles.

Unit's Purpose

"The purpose of the new unit," as explained by Reeves, "is to bring to the users of glow lamp recording equipment the proved advantages of ultra-violet recording.

"The Linolite glow lamp is regularly supplied in an adapter which is basically interchangeable with the conventional glow lamp mounting in existing Reeves recorders and in the majority of other types as well.

"The old-style recording slit block is removed and the Linolite adapter with its lens is inserted. Thereafter all that is necessary is to place the



Art Reeves Linolite Ultra-Violet Glow-Lamp recording unit.

Linolite glow lamp in the adapter just as any ordinary glow lamp is fitted into the recorder.

"The new unit was of course designed primarily for use in the Reeves double-system recorders, but it is equally adaptable to other types, including single system units. In this connection it may be pointed out that while ultra-violet recording naturally gives its greatest benefits when used with double system recorders and the new recording emulsions made specifically for this service, single system recording on regular

panchromatic emulsions likewise gain from black light recording, since panchromatization, while extending the color-sensitivity of any emulsion, does not destroy the violet and ultra-violet sensitivity inherent to any silver halide compound.

"Actual use of the units in several different recorders confirms the results of our own tests which indicated that this new ultra-violet recording unit greatly enhances the quality of any recording equipment, literally revealing quality the older visible light lamps could not put on the film."

AGFA IS SETTLED IN NEW BUILDING

Fine Structure Last Word in
Modernity and Conveniences

AGFA'S new building is working. It is situated at 6424 Santa Monica Boulevard, at the corner of Cole avenue, and was occupied by both Agfa Ansco Corporation and C. King Charney, Inc., just after the middle of September. It was constructed by the first named company and cost \$85,000. It represents the last word in modern construction. That statement goes two ways: in conveniences for the conduct of a distributing plant and for the operation on a lesser scale of a technical laboratory designed to handle routine problems of customers and also for research.

The building rests on the southeast corner of the highways named. All of the Santa Monica frontage is in two stories as well as half of that facing on Cole avenue. The footage is practically 100 on each street. On the corner is a circular decorative tower, surmounted with a four-way sign in lights of "Agfa."

The entrance is into a room with a high-ceilinged dome that forms the first floor of the tower. Over it on the second floor is the office of C. King Charney. The main administrative office is reminiscent of that which the companies have just left, with the large counter extending the depth of the room and under which are provided ample storage facilities for office necessities usually consigned to the most remote part of a business establishment.

On the lower floor are three rooms devoted to laboratory and research work, equipped with all the doodads

devised to make these the more effective.

Storage Capacity

"In the construction of this building there has been no compromise," declared Dr. Herbert Meyer, A.S.C., who showed the Cinematographer's reporter over the premises. "We have sought to secure the best in every detail, and in so far as we can learn we have got it."

Fire-proofing has been especially studied, as is understandable in a structure containing a warehouse with a capacity for storage of 40,000,000 feet of film. The stock room is of exceedingly high ceiling and about 45 by 60 feet in dimensions. While this room represents the one-story part of the building, the fire-proof cut-off wall extends to the top of the building.

There is an elaborate automatic sprinkler system, with fire-proof

doors, windows and walls. All the lighting globes are inclosed in glass vapor-proof containers.

On the lower floor also are the offices of Wilson Leahy and Grant Hough. The ceilings of these rooms, like those of the other rooms, are notably high, around 14 feet. In the laboratory and research rooms all the walls are in aluminum paint, designed to permit reflection right to the safety line.

Hot and cold water are accessible. There is a warmolator in every room, with thermostatic control. The building is designed to resist excessive heat, including that radiated by Old Sol. The heating equipment assures 99.6 percent of combustion, which means the radiator performs the double function of warming and ventilating as well.

On the upper floor are the auditor's rooms, the directors' room and the offices of Dr. Meyer and King Charney. The rooms are plainly but richly furnished, with the quality being sensed rather than obtruded. The directors' room is 12 by 30 feet in dimensions, with provision for eight conferrees.

All Purpose Accessories

The office of Charney is raised a half dozen steps above the floor level, in order to account for the higher ceiling of the entrance room below. It is novel in design and in its precedent smashing conveniences for the comfort of clients and visitors.

It is doubtful even if Dublin, famed for its attention to the needs of film business men at all hours of the day, can even attempt to match it. But what Irishman in his right mind ever would attempt to take issue with King Charney in a matter of entertainment?

Dr. Meyer's office fronts on the boulevard and faces the Hollywood hills. The doctor some months since relinquished his long association with Agfa Ansco and is now affiliated in a major capacity with C. King Charney, Inc. September 23, accompanied by Wilson Leahy of the Agfa staff, he left for New York. The two will remain in that state until about November 1.

By no means a minor factor of the Agfa Building is the open roof over the stock room or warehouse. With an area of 50 by 70 feet, it is intended to be used as an open air conference place when the air is balmy; for test shots as the occasion may arise, or for any other purpose which may be suggested by 3500 square feet of perfectly good area.

There is a good amount of adjacent footage owned by Agfa Ansco, secured and being held by Agfa against the building demands of the future.

Invaluable Information

Please make my change of address effective with September issue.

Your magazine is much appreciated reading and contains invaluable information for me. It is my intention to remain on your mailing list indefinitely.

H. C. LIEBERT.

Milwaukee.

RESEARCH COUNCIL COMPILES BULLETIN ON SOUND TRACKS

THE Research Council's committee on standardization of theatre sound projection equipment announces the preparation of a bulletin for release during the next month to all theatres in the United States and Canada, illustrating the ten kinds of sound track now being used by the studios for release prints.

Recent developments in sound recording technique and equipment have made it possible for the studios to utilize various types of recording for various purposes—sometimes using one type track for dialogue and another type track for special musical effects, etc.

During the past several months the Research Council has received a great number of inquiries from theatre managers and projectionists requesting information on the various kinds of tracks now reaching the theatre.

It was consequently decided to prepare a technical handbook to be sent to the approximately 17,000 theatres in the United States and Canada in order to assist them to obtain the greatest possible advantage from new developments in sound and to help to improve the quality of the sound reaching the public.

The bulletin will contain illustrations of the various kinds of tracks—standard variable density, standard variable area, single and double squeeze tracks, variable density and

variable area push-pull and the various types of noise reduction tracks.

Membership of the committee in charge of the council's theatre sound equipment standardization program, under the chairmanship of John Hilliard of Metro-Goldwyn-Mayer Studios, consists of John Aalberg, Lawrence Aicholtz, Carl Dreher, Barton Kreuzer, E. A. McClintock, K. F. Morgan, Elmer Raguse, Gordon Sawyer, William Thayer, Ralph Townsend, S. J. Twining and Gordon S. Mitchell, manager of the Research Council.

Paramount Amateur Club Stages Unusual Meeting

THE night of September 13 was a gala occasion for the Paramount Movie Club. Last June on a Sunday long looked forward to the members of the Paramount Studio Club, an organization composed of the workers on the lot of that major organization, trooped over to Catalina Island for the annual holiday.

The journey from the studio approximates fifty miles, one-half of the distance over deep water. On 16mm. film some members of the Paramount Movie Club, headed by President Carneal, put on to film a record of some of the highlights of the day's doings

and undoings, of the sports and the gayeties.

It was a party of all ages, with special attention to the little ones and particular honors for the veterans of the lot.

On September 13 several hundred gathered in the Paramount Studio Theater, and through the Movie Club's courtesy following much effort in cutting the film and synchronizing music to accompany the sequences the Studio Club members in attendance relived their big day of three months earlier.

Following the picture of the picnic the management of the studio, in compliment to the Studio Club, screened "Souls at Sea." This is the new subject which has been enjoying extended runs throughout the country. In spite of the many great productions that are being released during this year there is every reason to believe "Souls at Sea" will be a strong contender for its place as one of the best ten. And that is praise indeed.

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A. S. C. MEMBERS ON PARADE

Frank B. Good, A.S.C., and incidentally secretary of that organization for some time, is home from Alaska after a trip of three months picture-making. It was a Paramount unit of "Spawn of the North," which Henry Hathaway will direct when it formally goes into production in Hollywood. All of the northern scenes and backgrounds were made under

the direction of Richard Talmadge, who has had wide experience in and around studios.

Talmadge was a member of a famous family of stunt men and for a long time was a double for Douglas Fairbanks in the years when that more active player delighted the millions with his feats of daring. Then Talmadge went into the work on his

own and remained many years. More recently he has taken up directing.

Loyal Briggs, A.S.C., did a lot of process work, with Bob Ray assisting him. Otto Pierce was the operative cameraman on the production, with Paul Cable assisting. Frank Keis was business manager.

The unit exposed more than fifty thousand feet of negative. There were numerous hazards encountered by the troupe, as was to be expected in a location where it was in contact with glacier and iceberg and the navigation of Wrangle Narrows. In these scenes as well as others in the trip all of the crew wore life preservers. In the case of the glacier the danger came from the separation from the main body of ice blocks weighing thousands of tons, with the consequent young tidal wave that followed the immersion.

Skill Required

Plenty of skill was required, too, on the part of the skippers in navigating the narrows from the town of Wrangle to Petersburg. The tide flows fast and rises high. In the six-hour run ninety-two light buoys were passed in the narrows. There was hardly a stretch of 150 feet straight-away.

"It is marvelous," declared Frank in speaking of the zigzagging back and forth, "how the skippers of large boats are able to navigate through the narrows in bad water. The tide in one of the narrows rises so high and so fast that it can't force itself through the gorge into the lake, with the result a waterfall is formed.

"It is about three-quarters of an hour after full high tide before a boat can get through. Then the tide starts to recede, and the water fall

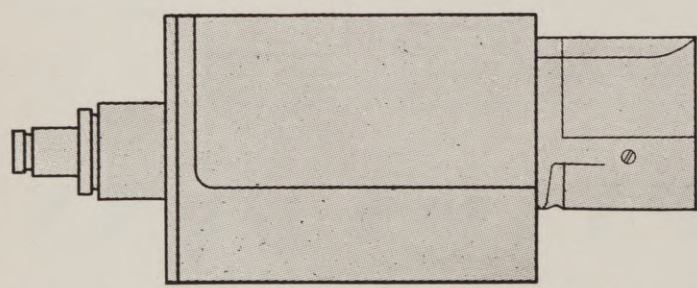
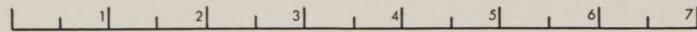


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promptly changes from the white water into the salt water on the other side of the chuck. The narrows are about four or five hundred feet long and the salt water is about 150 deep at the entrance of the narrows."

The secretary of the A.S.C. in the line of his duty had an opportunity to get a remarkable air view of a part of Alaskan terrain. He traveled about 190 miles to the west coast to look at canneries there from a photographic standpoint. "Marvelous country," he declared with enthusiasm, "The mountains literally are covered with lakes and waterfalls, just one after another.

Great Pilots

"And while we are on that subject," he continued, "the pilots in that country certainly are the real article. It was my privilege to travel with Herb Munger. The big pontoon ships are equipped with two-way radio. To follow Herb put that big baby down into rough water, avoiding nets and fighting tides running eight and nine miles an hour, is a rare treat. Those men up there fly in weather—and do it as part of a day's work—that would with plenty of justification keep some of their brothers in the states safely on the ground."

The completed picture should contain an abundance of melodrama. As piracy is not unrelated to the theme there were many chases in these rough waters. Ketchikan, the first port of entry into Alaska, is the center of the story, and everything around the town was photographed either straight or in process. The locale extended to Juneau, a couple of hundred miles away.

At Ketchikan two boats were char-

tered for the work. One of these, the Sylph, became the camera boat, and Frank describes it as a "honey" for steadiness. "That same remark goes for Skipper Bill Marsha," the cameraman continued. "This former mid-westerner has been on this boat seven years, and he knows the boat and the Alaskan country."

The A.S.C. man declares the residents of Ketchikan and Metlakatla, on Annette Island, in which neighborhood most of the cannery stuff was done, together with the salmon traps, both floating and standing, did everything in their power to make the stay of the troupe over the three months as pleasant as possible. This remark

went for the cannery owners and the Indians, the latter of whom constituted a majority of the skippers.

Ira Morgan, A.S.C., was unkindly treated by the fates that presided over the publication Technicians Credits. He directed the photography on Grand National's "The Girl Said No," but according to the handbook quoted it was some one else. Not only was the offense committed once; it was persisted in, just as a regular jinx will do when he gets on the trail of a live blunder. What made it worse, the man who got it couldn't use it, and of course it was a good picture, too. That's the way it goes.

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SOME COMMENT, SOME FACT

THE ALPHABET WIDENS

Perhaps no actor or actress in recent years has been the subject of wider controversy as to individual judgment in what constitutes obedience to Hamlet's injunction of the art of acting than Katherine Hepburn. One sharp-tongued woman, of merciless wit and ruthless disregard of the feelings of others, suggested some

time since that Hepburn in acting ran the gamut of emotions from A to B.

Of course the thoughtless and the unfeeling, usually in a majority, laughed. It would be interesting if Dorothy Parker is inclined to add, after viewing "Stage Door," anything to her alphabetical estimation of Hepburn as an actress.

Whether she do or no it is possible a majority of any doubters that still have been atop the fence will slide to the ground and concede that Hepburn qualifies as an honest to goodness actress. If "Stage Door" was designed for that purpose it attained it; Hepburn faces the issue and conquers. She gives a splendid performance.

The picture is one to see and one not to miss. It is brilliant in its lines and rare in its humanity. Conviction of its truth to life follows its craftsmanship.

AMAZING FIGURES

JUST as a basis on which to form an estimate of the number of cameras that are being manufactured in the United States, it is announced that since last May, in the one state of California alone, more than sixty thousand cameras of one of the lesser priced brands have been sold. That means roughly in the United States if the same will and ability to buy prevailed a million and a quarter cameras of that same brand were sold.

Beyond question the makers of the average priced and the expensive cameras will welcome this invading army of photographers, all of them potential buyers of big time stuff.

Keeping step with the invading lenses are the mushrooming publications featuring photographs. Possibly if this year logically should predict the number of cameras that will be in use ten years hence yells

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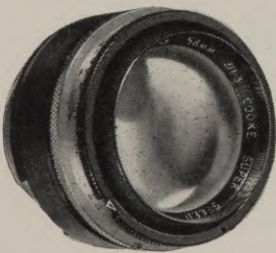
would ascend for the ambulance and the convening of the commission in lunacy.

RUFÉ DAVIS UNIQUE

RUFÉ DAVIS brings a new brand of humor to the screen. He is as different as Chaplin. Where the great funster combines slapstick and subtlety, pathetic and comic, the new funmaker has an individuality distinctively his own in the field of broad fun. Very likely the new Paramount player has abilities as yet unsounded or not yet drawn upon.

Had Davis come over the horizon a few years ago he would have been thrust into a two-reel comedy series without loss of time following "Mountain Music." Now with a much better break in "This Way, Please," in which he holds the screen seemingly for a half dozen full minutes, practically without interruption, easily he will rate one of the top funsters of the screen.

Aside from the mixed-up exhibition routine due to double features Davis' indicated spot is in two-reelers. With that situation out front it would seem his best chance as a business bringer would be in a headliner spot in a robust comedy or musical. Something like "Down on the Farm," would you say, and give the hog under the fence and the dogs another chance.



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Interesting, Educational

...My interest in moviemaking lies strictly in the 8mm. field. The various articles written in your magazine for such other amateurs as myself I have found to be very interesting and educational.

P. S. MASLEY.
Minneapolis, Sept. 6.

Eastman Builds Case for Kodak Bantam Special

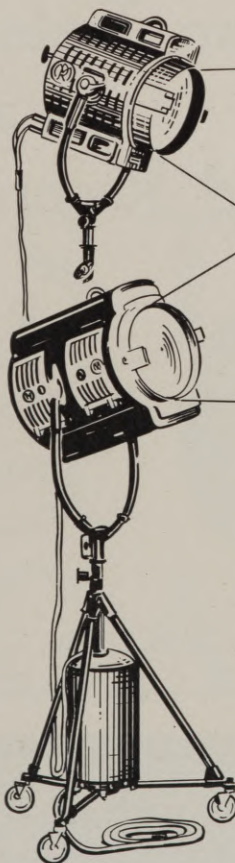
Users of Kodak Bantam Specials who wish to give the camera the protection of a case yet have it ready for immediate use will welcome a

new "open-front" field case that permits quick operation.

The case is made in two sections—a skeleton inner shell that holds the camera horizontally in picture-making position and a folding outer shell that drops down hinge-fashion, out of the lens field. The outer shell fastens to the inner with five glove-snaps and can be taken off entirely if the user wishes.

Construction is of fine tan "bridle" leather. Neck strap rings are placed at the upper corners of the inner shell, which is lined with velveteen and fits the camera body snugly. A spring steel frame behind the velveteen lining gives added safety grip, but allows quick removal of the camera for reloading. A cut-out at the back gives ready access to the sliding film window cover.

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BELIEVE NEW CAMERA MAKES ECLIPSE FIND

OFFERING the possibility that his photographs of the solar eclipse in Peru last June may be the first to have caught the zodiacal light in the neighborhood of the sun, Prof. Charles H. Smiley of Brown University described the results of his expedition high into the Andes Mountains before meetings of the American Astronomical Society in Williamstown, Mass., Sept 9.

The zodiacal light is a faintly luminous band seen best at the equator, extending vertically there from the horizon at early evening. The light is said to come from small particles of matter moving in the same plane with the earth. It has never before been photographed close to the sun before.

Wedge-Shaped Region

"Beyond the corona," Prof. Smiley said, "the exposure on a double-coated orthochromatic emulsion showed a wedge-shaped region, extending along the elliptic, slightly lighter than the remaining region around the sun. This wedge of light extended from one edge of the film to the visible horizon, a distance of about 12 degrees.

"If authorities had not pronounced it impossible to photograph the zodiacal light in the neighborhood of

the sun at the time of the eclipse, one might suspect the wedge of light of being the zodiacal light."

He added that he was sure the wedge was not the result of a stray thumb-print, since the negative was so dense that only 1/3000th of the incident light passes through it. He pointed out that a drawing made by the astronomer Langley at a solar eclipse in 1878 showed a similar wedge-shaped region of light.

Taken on an f/1

Prof. Smiley's photographs were taken with a Schmidt astronomical "candid" camera, reported to be the fastest of its kind ever used on an eclipse expedition. It has a lens speed of f/1, a focal length of four inches, and a lens-mirror system

which had to be ground and polished to within a millionth of an inch of perfection. The lens, four inches in diameter, is concave at the edges and convex in the center.

Prof. Smiley also reported that his three negatives, each made from exceptionally sensitive film, showed coronal streamers extending for about 4,000,000 miles into space, or about four times the sun's diameter. This is as far as they could be seen with the naked eye from the observing site at Callan, Peru, 14,000 feet above sea level.

The sun in eclipse appears as a mere pinhead on his negatives, with the rest of the circular film, the size of a half dollar, recording the coronal streamers and surrounding sky, including the wedge-shaped band which may be the zodiacal light.

Prof. Smiley hopes to photograph the total solar eclipse of Oct. 1, 1940, from South America, in order to verify the results of his expedition to Peru this year.

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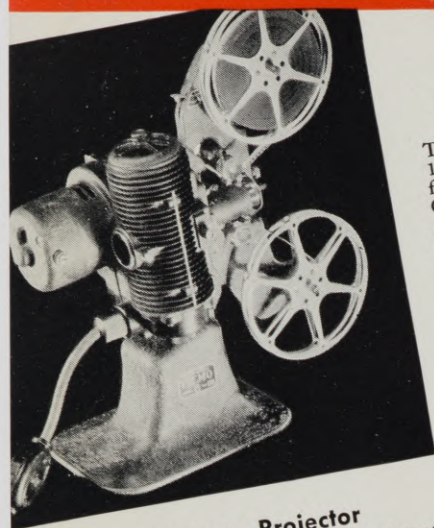
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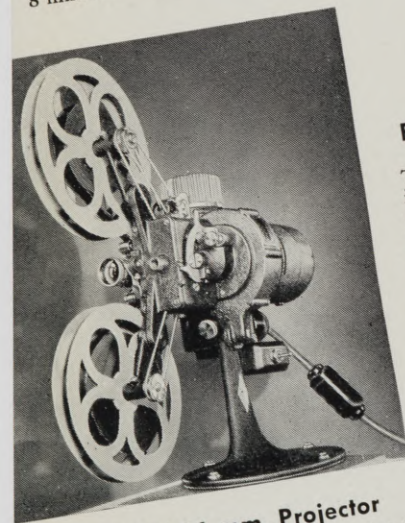
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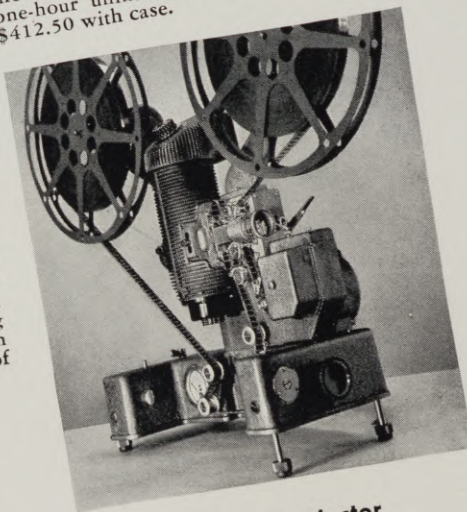


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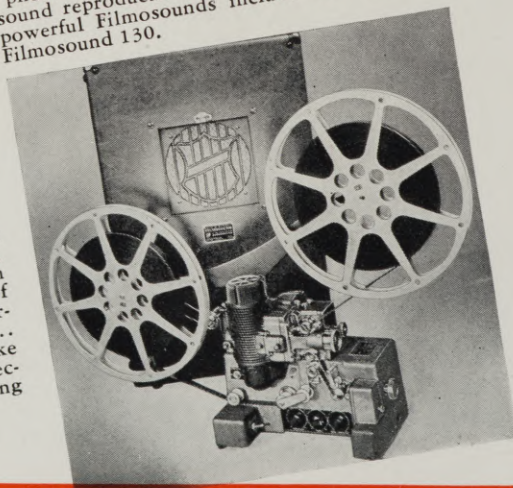
FILMO 130, 16 mm. Projector
(below)

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CINEMATOGRAPHY IN 8MM CAMERAS AID IN DENTISTRY

Expert Amateur Tells of Advances Made
in Visual Education Through Help of
Ultra Close-Ups and Other Expedients

By Henry A. Linek, D.D.S.

*Member Faculty University of Southern California College of Dentistry,
Member Los Angeles 8mm. Club*

VISUAL education! These are the words that now predominate in all discussions concerning the modernization of teaching methods. Within recent months educators seem to be united in the opinion that owing to the ever crowding demands made upon the curricula in schools there is a need for "speeding up" the process of transmitting information to students and at the same time presenting it in a manner that the information will be retained.

The answer to this problem is "visualization." By visualization is meant, in this case, knowledge obtained and retained through the medium of sight. All of us are aware through our own experiences and will therefore agree with the psychologists who tell us that images transmitted to the brain

by means of the eye are retained for longer periods of time than those images received through the sense of hearing.

And also, they tell us, pictures remain far longer in our memory than facts gleaned from the printed page. Advertisers have known this; editors have known it, and now schools are realizing its value.

U.S.C. Pioneers

In this matter of visual education the University of Southern California College of Dentistry has pioneered. Ten years ago it was the first dental school to inaugurate a Department of Cinematography. And the success of this undertaking is credited to Dr. A. C. La Touche of the Los Angeles Cinema Club and Dr. F. Robert

Loscher, president of the Los Angeles 8mm. Club. These two men have produced and are still producing scientific pictures receiving national acclaim by the dental profession.

Close-Ups

The writer, who happens to be an 8mm. enthusiast, soon found himself endeavoring to produce a dental film for educational purposes. And although he realizes the reader may have little concern as to how dental pictures should be made, there may be a few problems solved that will apply to other types of filming.

In any cine filming the abundant use of close-ups has always been advised, but in the making of a technical picture their use is imperative. In fact, every scene should confine itself to the immediate field of operation.

As in the case of a dental picture, one may begin by giving a close-up of the patient in the chair and the dental assistant's hands fastening the napkin about the patient's shoulders. After this introduction, the dentist's hands, with instruments examining the offending tooth, are shown.

As the dentist proceeds to operate we cut into an "ultra close-up," and most all scenes that follow will show the action of instruments and the manipulation of materials within the tooth itself.

Having mentioned "ultra close-ups" it may be well to explain how they are made, as their use will open up new fields, such as the fascinating subject of photographing garden insects. Imagine the thrill of filling the screen with objects and scenes no larger than a postage stamp!

Extreme Close-Ups

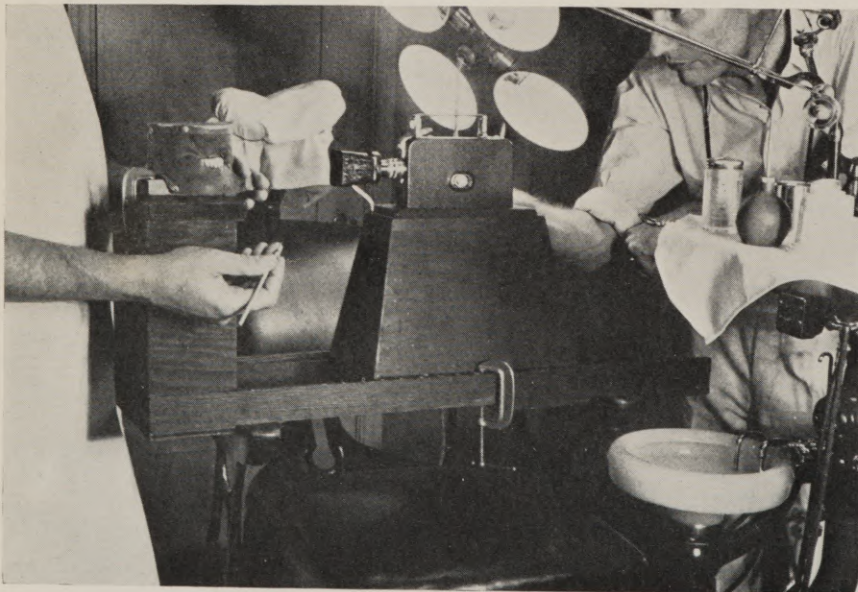
If you own a telephoto lens, a Harrison sunshade and enjoy making simple gadgets, here is one way of making extreme close-ups, with an assurance of sharp focus and perfect centering.

The idea presented here is for an Eastman Model 60. However, the same principle can be applied to any make of camera.

Using $\frac{3}{8}$ -inch ply wood, make a base board $2\frac{1}{2}$ inches by 16 inches. Then attach $\frac{1}{2}$ -inch side flanges, making sure the camera will fit between.

Drill a $\frac{5}{16}$ -inch hole to accommodate a Harrison tripod screw as located in drawing. Also drill a hole to receive a $\frac{1}{4}$ -inch diameter metal rod $3\frac{1}{2}$ inches long and threaded at one end. Using a nut on top and another below the base, fastens this rod, which acts as a sun shade support.

Construct the hinged pointer as shown in the illustration, but do not attach it permanently to the base until test shots are made at various



A peg located directly below the principal tooth on the underside of the "mouth" permits it to be rotated with the tooth as axis.

distances and recorded, in order to determine position for sharpest focus. The distance from the tip of the pointer to the front of camera will be approximately $9\frac{1}{2}$ inches.

How to Use

The Harrison sunshade is used merely to support an auxiliary lens. This lens may be removed from any small titler. It can be removed by grinding off the rivet heads, and it is a simple matter to replace it in the titler again when needed by using small bolts instead of rivets in the retaining ring.

The lens will be too large to slip into the sunshade, but by carefully grinding two parallel sides the proper width can be obtained. This grinding will not ruin the lens for future titling purposes.

To use, set the telephoto lens at infinity; have pointer touch the object to be photographed; lock the tripod in position; lower the pointer and shoot.

You will have photographed an area $\frac{5}{8}$ by $\frac{7}{8}$ of an inch! And to photograph an area 2 by $2\frac{1}{2}$ inches change to the 13mm. lens. For larger shots, remove the auxiliary lens and focus in the usual manner. It will not be necessary to remove the position finder from the tripod.

Steadiness Essential

One of the problems in dental filming and especially when using the "ultra close-up" is that caused by the inadvertent moving of the patient's head. A slight movement literally throws the field out of the picture.

If the operation is being performed with a rubber dam in place it is a simple matter to overcome this difficulty by faking the shots with a dummy mouth.

Extracted teeth similar to those of the patient's are selected and arranged in a wooden frame. When the rubber dam is applied not even a dentist can detect the deception in the picture.

A device similar to a titling frame is built of wood. The base is about 2 feet long and snaps on to the arms of a dental chair in easy access to the dental operating unit and cabinet. At one end is a boxlike stand 12 inches high. This holds the wooden block containing the carefully prepared "set."

On a track a movable block supports the camera. Small wood clamps lock the camera and "staged" teeth firmly in place. Thus, camera and teeth are constantly retained in a relative position, and a rock steady picture is assured.

In the editing, flashes of the patient are cut in from time to time to com-

plete the simulation. However, since many operations are not performed with the rubber dam in place it will then be necessary to shoot directly on living tissues.

Composition

These shots can be made steady if the patient is instructed to relax and if the dentist is reminded not to apply undue pressure against the teeth. After each shot the pointer of the position finder is raised, and if it strikes the same location as before you know that the patient's head has not moved during the scene.

Having hurdled two obstacles in dental filming, let us consider other phases equally important. When making a technical picture the cameraman should not overlook his opportunities for good composition. The same rules apply as for other type of picture.

When it is necessary to show a series of scenes, all similar in their action, change the camera angle frequently to break the monotony. Naturally, tricky angle shots have no place in a scientific picture, but the judicious selection of camera positions is always good "cine."

When photographing hands in action keep them below the center line of the frame, as this reacts more restfully upon the audience. When photographing hands at a bench, a harmonious arrangement should be made of the materials and tools used.

If there are bottles, cans, jars, or boxes in the scene, place large distinctive labels on each so that when contents are used, the audience will be informed without necessity of an

explanatory title. If more familiar objects are used, as for example, a stick of sealing wax, have it lying with a label below.

Lighting and Exposure

Then when the wax is used the audience is not mystified. If a gas flame is to be shown it will not photograph unless the oxygen is reduced by adjusting the vent. This makes a yellow flame which will then register.

To show a lapse of time while materials used must be allowed to "set," or to dry, or to be heated, etc., the interval may be bridged with a fade out—fade in. As in the case of heating or cooling an object, flashes showing the required temperatures on a thermometer will be instructive.

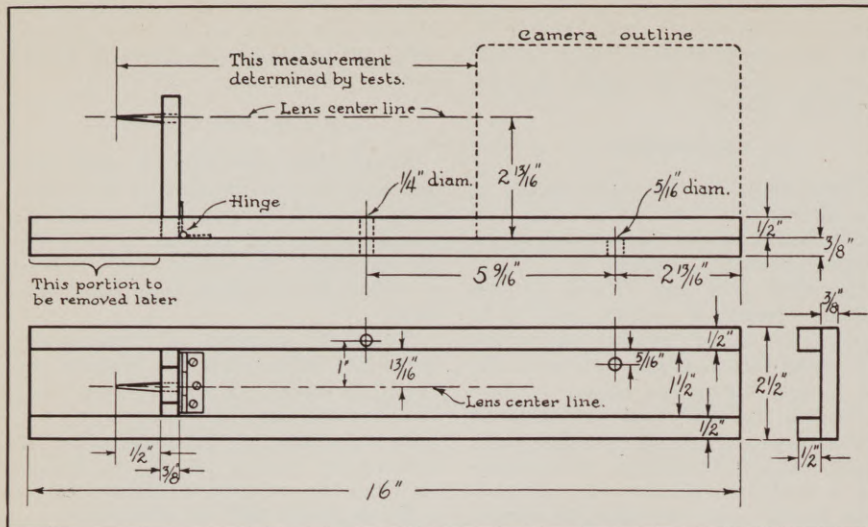
When lighting for Type A Kodachrome film the writer uses a cluster of four No. 1 photofloods at a distance of 2 feet and set at an angle to the field on all close-ups. This gives a three-quarter lighting with a probable f/8 reading. Light shadows are desirable because they give depth and contour to the subjects.

To determine the proper exposure with a meter for very small objects it will be necessary to substitute a larger object such as a sheet of paper or fabric having similar color and brightness. When taking meter readings check the exposure at the point of interest and let the other areas take care of themselves.

This same rule may be applied to scenes taken with Kodachrome. Where there is a large area of white or very light colors the exposure should be made for them, allowing the darker



The pointer is attached by a hinge. The sunshade holds a supplementary lens. Using a telephoto lens gives an area $\frac{7}{8}$ by $\frac{5}{8}$ of an inch.



An aid in photographing garden insects or any small objects.

shades to take care of themselves. This prevents a light area from "burning" the scene.

Why 8mm?

The above question is often asked. The most reasonable answer is "It is more economical." But let us an-

alyze this question further by asking another.

"Is the quality of 8mm. as good as results attained with a 16mm. camera?" The answer to this question depends upon the camera you own. If you shoot with a 16 you will likely

contend that because of their small size 8mm. pictures are naturally more granular.

But if you are an 8mm. fan you will probably insist that your pictures are equal, if not superior, to those made with a 16mm. camera. However, should we ask the man who has never owned a camera he will invariably reply that he can see no difference. So there you are!

There is one fact, though, that must be recognized. That is, 8mm. is here to stay. It has not been found wanting. And if the 8mm. camera insists as it does upon entering scientific and educational fields, manufacturers will necessarily be obliged to heed the demands for a de luxe model camera. This camera will have, like some of its big brothers, a turret lens mount, ground glass focusing, a rewind, frame counter and all the other accoutrements that the 8mm. owner envies in the finest 16mm. cameras.

Therefore, let us hope that our American camera manufacturers will soon recognize this ever growing need and thereby contribute to the further advancement of 8mm. in education.

MOVIE CLUB NEWS

Los Angeles 8mm Club

On September 14 the regular meeting of the Los Angeles 8mm. Club was held at the Eastman Auditorium, 6706 Santa Monica boulevard. Al Leitch, chairman of the social committee, in the absence of Vice President Walter, introduced A. H. Barnett, Mrs. H. J. Barney, Volney P. Burdick, A. B. Callow, Leslie A. Coleman, Bob Roberts, Joe Compton, E. L. Emenegger, A. B. Allenbaugh and John G. Esterly, all new members, to the club. We are proud to say this is the largest number of new members accepted at any one meeting in the history of the club.

C. G. Cornell of the news items committee called attention to interesting articles published in various amateur motion picture magazines. He mentioned in particular the article on vacation filming which appeared in the American Cinematographer written by Club Member John E. Walter. Also the article written by William Stull, A.S.C., on titling devices used by Dr. H. E. Linek.

Mr. Leitch announced the picnic to be held on Sunday, Sept. 26, in Griffith Park, at the location known as Mineral Wells.

An open discussion was held regarding the annual banquet of the club. It will be held at the Victor Hugo Saturday evening, December 11.

It was announced the election of

officers will soon take place. It was suggested an amendment to the by-laws be drawn making possible the distribution of officers in the Club, that the work might be allotted more evenly. Upon motion of Mr. Carpenter it was decided that our present by-laws be amended to create the offices of secretary, treasurer and editor of the club paper in view of the amount of work involved. It was suggested the secretary and editor be allowed to appoint their assistants.

The technical committee session proved to be most helpful.

The projection of members' films for analysis was next in order and several most interesting pictures were viewed. Dr. Taylor's picture taken on a yacht cruise to Honolulu was shown and some beautiful shots were displayed on this kodachrome film.

C. J. VerHalen announced the winners of the one-reeler contest of the club. Dr. John M. Griffin with his Kodachrome picture was the proud winner, receiving four No. 200 photo-flood lamps as prize. The second prize was entitled "Mountain Music" by the secretary, and C. W. A. Cadarette with his "Lazy Bones" carried away third prize.

Other entries in the contest also were shown and President Loscher handed each entrant the "judges classification" sheet recently inaugurated as a feature of the club, to point out mistakes and weak points in

entries. Mr. Hague, Mr. Becker, and Mr. Scull were asked to bring their entries to the next meeting to be shown owing to the lateness of the evening.

M. R. ARMSTRONG, Secretary.

Philadelphia Cinema

The Philadelphia Cinema Club started its series of Fall meetings by its September meeting, held in the Rose Room, of the Hotel Adelphia, on September 14. A turnout of sixty greeted this opening session, which featured as its principal speaker Kenneth F. Space of the Horman Foundation, who talked on "Editing."

Mr. Space is unusually well qualified to speak on this subject. He gave a lot of help with this perplexing problem. He has been a photographer for seventeen years, a moviemaker eleven years and recently has returned from a five months tour of the Southern States, shooting some 29,000 feet of 16mm. pictures in color and black and white and 2500 still pictures. He made the first experimental movie used by Agfa-Ansco, and after two years in its research laboratory became official cameraman for several years.

After leaving Agfa he made industrial and commercial motion pictures until going to New York, three years ago, to make the first "modernistic" publicity film for Sherman Price Associates.

He has been with the Harmon
(Continued on Page 444)

THREE LENS TURRET BUILT FOR 8MM USERS

IF one were to attempt a survey of the users of 8mm. cameras to determine the most urgently desired improvement in equipment, the answer would be an overwhelming demand for a lens turret. Slowly, as 8mm. enticed more and more serious filers, the "eights" have acquired virtually all of the mechanical refinements of 16mm. equipment with the one remarkable exception of the invaluable multiple-lens turret.

Users of 8mm. cameras will therefore welcome the news that an excellent three-lens turret has been made and several have been sold. It is designed and built by Theo M. Bell, who for many years has been well and favorably known in the motion picture industry as a maker of fine professional cinemachinery. The initial model is designed for use with the Filmo Eights; but types adaptable to Eastman and other 8mm. cameras are forthcoming shortly.

A unique feature of the design is the fact that the turret makes no fundamental change in the camera or its mechanism. The present type, made for use with Bell and Howell 8mm. cameras, is applied by merely removing the regular front plate of the camera and substituting the plate which carries the turret.

If for any reason it may be desired to use the camera subsequently without the turret, the original front plate may be replaced and the camera will be restored to its original condition.

The entire construction of the Bell turret is of duralumin, and the design is so compact that the installation adds very little to either size or the weight of the camera. The turret measures about three inches in diameter and is scarcely three-sixteenths of an inch thick. It operates in the conventional manner, revolving freely, with a spring-actuated catch which gives an audible click when any lens is in photographing position in front of the aperture.

Several methods of lens mounting may be used. The regular Bell and Howell bayonet-type lens mounting may be fitted to any or all of the three lens mounts if desired. It is also possible to remove these fittings from the lens and screw the lens on to a standard 40-thread screw mount.

In addition, a simple adapter makes it possible to utilize any standard 16mm. camera lens without need for

recalibration. Thus 8mm. users who own 16mm. cameras such as the Filmo, Victor, etc., can interchange the lenses purchased for these with their "eights," obtaining a much wider range of focal lengths than normally possible with regular 8mm. equipment.

The regular finder serves unchanged. The hinged mattes for defining the field of telephoto lenses may be retained if desired. Otherwise, professional type finder mattes of heavy tinted celluloid are used.

Good Appearance

In fitting this turret to the Bell and Howell "eights" the regular operating lever is covered by the turret plate. A simple extension fitting carries this lever to a convenient position at the side of the camera, where it is operated in the usual way.

The direction of movement of this extension lever is the same as that of the original operating lever. Provision is made to accommodate the upward movement of the lever for cameras equipped for single frame release.

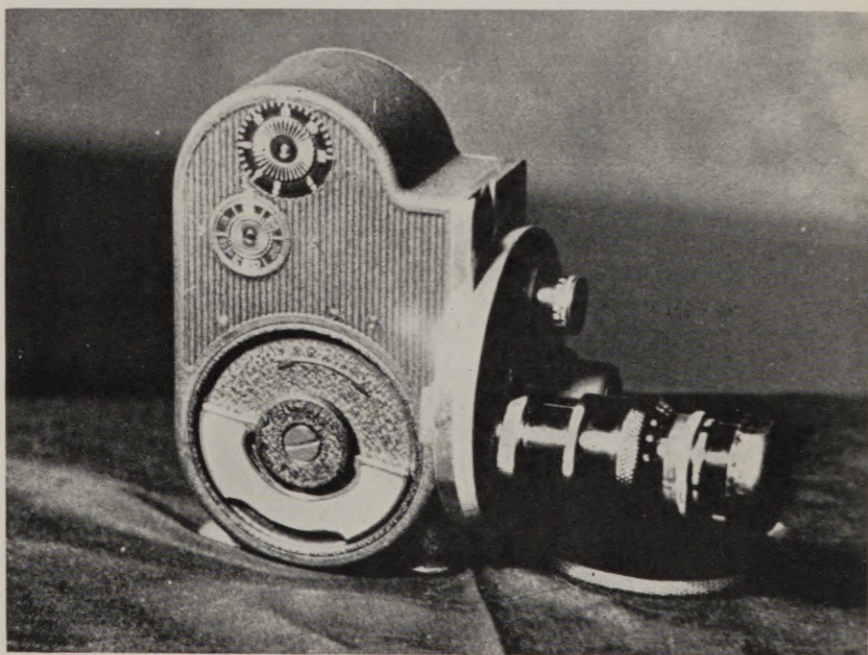
The appearance of the turret is attractive and harmonizes well with the finish of the camera. The turret and its base plate are of machine finished

duralumin, which has a moderately polished silverlike appearance and is non-tarnishing.

Bell developed this turret at the insistence of an 8mm. enthusiast, and every detail of the design and workmanship bespeaks its practical origin. The designer is strongly to be commended for having devised this attachment, which so greatly extends the range of the eight millimetre camera's usefulness without making any fundamental change in the basic design of the camera itself.

He is also developing a means of direct focusing on a ground glass focusing screen, for use with cameras equipped with this turret. He plans to provide a direct magnifying system, viewing the full frame, rather than the indirect or prismatic types. A full description of this focusing system will be given in these pages at the earliest date.

Elmer Dyer, A.S.C., and Mrs. Dyer are on the way home from London, where the flying filer has been doing his stuff for MGM. Following the completion of the stint at the studio the Dyers did the grand tour of Europe. They'll be saying howdy any day now.



Side view of three-turret lens mounted on 8mm. camera

HALF ACROSS WORLD AND BACK IN COLOR

AS a matter of record in more ways than one it is worth chronicling that the first person to make the complete trans-Pacific air trip from San Francisco to Hongkong was a 16mm. moviemaker.

The holder of the No. 1 ticket on the China Clipper's first through flight across the Pacific was Carlton E. Morse, author of radio's "One Man's Family" program, and cine-filmer with a Magazine Cine-Kodak.

As a result, the Clipper's flight lives on in eight hundred feet of excellent Kodachrome, made under what were in many instances trying photographic conditions.

The film begins with intimate scenes showing the civic send-off which sped the plane and its passengers on their way. Fortunately a silent film, it turns quickly from the monotony of stolid political figures addressing the microphone to far more interesting and personal scenes of Morse meeting his fellow-passengers and the Clipper's crew.

These introductions completed (punctuated, of course, by the activi-

ties of newspaper photographers), the travelers are seen boarding the plane, the motors are revved up, and the huge ship takes off.

In Honolulu Harbor

Much of this part of the picture, Morse explains, was taken for him by a moviemaking friend. "In the first place," he remarks, "when one is in the middle of all this excitement he isn't likely to have much time for moviemaking. Secondly, of course, the camera had to go aboard ahead of time with the rest of my baggage. Finally, how else could I film this particular take-off unless I did it by proxy?"

Morse's camera, however, swings into action upon the plane's arrival in Honolulu. Hinting discreetly at the official welcome these first trippers received in Hawaii, the film shows glimpses of both the modern and the less familiar, older parts of the island.

Off again the next morning to Midway Island, we glimpse something of the airline's establishment there, and off again across another thousand

miles of empty ocean to Wake Island, a tiny spot of sand scarcely larger than a pocket handkerchief in the midst of leagues of ocean.

Every traveler stopping at this remote spot recalls particularly the myriads of incredibly tame seabirds which, aside from a naval radio crew and Pan American's newly installed force, are almost the island's sole inhabitants. Morse's camera faithfully verifies this impression, with close-ups and slow-motion long shots of these surprisingly unwild fowl.

Starts Home

Finishing the next "hop" at Guam, the camera lingers lovingly over this little-known American possession which, Morse says, is far more nearly the idyllic South Sea island of romance than any of the plane's more publicized stopping places.

The next sequence carries plane and passengers to Manila, and thence to Hongkong—the end of the run where, to his surprise, Morse finds himself greeted by showery weather conditions which, aside from the setting, might easily be duplicated without leaving San Francisco.

The return trip, made over the same route, is wisely only suggested, and the viewer is left with colorful impressions of strange lands, interspersed with exquisite scenes of the bizarre world seen only when flying above mile high clouds.

As Morse is editing the film, its half-hour running time brings the audience something of the same kaleidoscopic melange of strange sights and scenes he himself must have experienced on the journey that took him twice across the largest of oceans within twelve days.

No Regrets, but—

"I don't in the least regret the quick trip I made," Morse remarks, "but I certainly can't advise any filmer to take it so hurriedly. The trip in itself is such an overwhelmingly wonderful experience you owe it to yourself (unless badly pressed for time) to make a few stopovers so that you can film things adequately.

"Naturally the plane's schedules are arranged in the interests of flying rather than filming. All along the way we would take off early in the



Carlton E. Morse, the flying filmer who was the China Clipper's first through passenger on its maiden flight to Hong Kong, shows his ticket to Ann Shelley of his "One Man's Family" radio cast.

morning and land rather late in the evening, to take off again the next morning. This doesn't leave much time or light for serious cinematography.

Stopovers Will Help

"The results I got are far more to the credit of the camera and my exposure meter than to anything I may have done. Like a newsreel cinematographer, I had to take what I could get and hope the audience would like it.

"If I were taking the trip again I would plan for stopovers at several points: certainly in Guam, and if possible in Honolulu, and Hongkong. At each of these places there is plenty to film between planes, and each offers one a complete change of surroundings, with new things to see and experience every moment.

"Traveling this way, there is another, strictly photographic advantage, too. This is the fact that you can plan your film supply more accurately. As you know, the amount of baggage one can carry on these long overwater flights is somewhat limited; and until you place them on an airline's scales you can't have any idea how much even the lightest of home movie cameras and a fair supply of film weigh. On my trip I was continually husbanding my film against the time when I might have none for irreplaceable scenes.

"But if I were making the trip again I would plan for this, and send a good supply of film ahead to each stopping place. When I got there I would send my exposed rolls back to the processing station by mail, while I carried on with a fresh supply, secure in the knowledge that more fresh film would be waiting at that end of that hop.

Intimate Shots

"Working this way, I would have both the time and the film to cover many details of the air trip more thoroughly. For instance, going straight through as I did, there was no chance to film one of the huge planes landing or taking off. And there are such matters as landing facilities and servicing methods.

"In some cases the plane can taxi right up to the shore, tying up to a landing and servicing float. In others, the plane moors to a buoy nearly a mile offshore, discharging the passengers into a lighter while the service crew connect hoses to pipes on the buoy through which fuel and oil are pumped from the tanks on shore.

"And how those mechanics swarm over the plane the minute it comes in! It is a story in itself. So, too, are the hotel accommodations the air-

line has planted on these isolated islets thousands of miles from civilization."

For various reasons not unconnected with the foreign possessions over which the Clippers fly the use of cameras in the plane itself is officially tabu. Cameras themselves are permissible, but at the start of each flight the steward solemnly collects them and places them in a cupboard.

Morse, however, who was a newspaperman before radio claimed him, is still too much the reporter to be wholly complaisant under such restrictions. He soon learned where the cameras were hidden, and on the long, drowsy all-day flights it was not too difficult occasionally to sneak the camera out of the locker and steal a few scenes. One of the berths is always made up for the convenience of sleepy or indisposed passengers.

Beauty of View

It offered an excellent vantage point for scene-stealing. Accordingly Morse's picture is embellished with a few stolen scenes of the interior of the plane, and of the indescribably beautiful cloudland above which the plane flies.

"The beauty of the view seen when flying above the clouds at any time,

but particularly at sunset after a showery day, or at dawn, is a thing of such other-worldly loveliness no words can describe it," the traveler declares. "The deep tones of the sky above—the flecks of gray ocean showing far below through breaks in the cloud floor—and above all the twisted, incredible beauty of the clouds themselves, a visual symphony in white and gray, peachbloom and gold, have to be described in color film or not at all.

Picture in Words

"Sometimes you feel you are flying over the mountains of a dream; at other times, you feel as though you were flying over polar icebergs. Throughout is more color than one would think possible—for in addition to the colorings of sky, sea, clouds and dawn, nature often throws in a perfect rainbow for good measure, with its arch stretched across the carpet of clouds far below.

"The beauty of these sights alone makes the trip worth while, and if you can capture them on Kodachrome they will make your film something that will for many years renew the thrill of soaring half way across the world."

WHEN ADDED SCENES CLOSE UP THE GAPS

By DANIEL B. CLARK, A.S.C.

IT'S a big advantage, when you have a problem, to be able to learn what someone else, faced with a similar one, has done to reach a solution. When it comes to moviemaking the users of sub-standard cineboxes can very often gain such an advantage by turning to see what the professional has done to solve the same sort of problems.

Right now, one of the big questions is this matter of bridging the gaps in vacation film continuities occasioned by scenes that were forgotten or unfilmable. I've faced the same problem often enough myself, not only with my 16mm. camera but with my 35 mm. studio outfit. Nearly always there is a way to fill those gaps, and without undue expense, at that.

Very often indeed a studio unit will come back from an arduous location trip to discover that some scenes might be done better, or that others might be supplemented or replaced to good advantage. Now it costs money to send a studio troupe on location to retake these scenes, and when you have just so much money to spend,

and must have your picture finished on a certain date—well, often you can't go back and make those missing scenes as you would like.

What's the answer? "Added scenes." In other words, scenes made on a similar but less expensive location, which can be cut into the existing footage so perfectly even an expert can't tell where one set stops and the other begins.

Just a Load of Land

For instance, suppose our company has been working among the sand dunes of the Arizona deserts, and when we get back to Hollywood we find that certain closer shots of the actors would strengthen the picture. Well, there's no point in taking an expensive company several hundred miles for just a few scenes, so we make our "added scenes" at home in Hollywood.

Sometimes a truckload of sand on the stage floor and a painted sky backing representing clouds have turned the trick; at other times close-ups from angles that give a back-

ground of sky and clouds have been all that was necessary.

This latter treatment will work every bit as well with an 8mm. or a 16mm. camera as it does with 35mm. film. So we have our first point in making added scenes. If it's close shots we need, select an inconspicuous background—one similar to what might be expected on the real location—and make the necessary shots from angles that don't make the background too conspicuous.

For instance, suppose you spent the summer in New England. Back home, you suddenly decide you need a few close-ups of yourself or of your party. What could be easier—or more convincing—than to make those close-ups with a background of sky, of tree-trunks, or even of non-committal grass?

A pine limb in the foreground often helps in such a shot; and you can find a pine or two in almost every part of the country, even if only in the park.

Often, though, both the professional and the amateur will need medium shots or long shots as well as close-ups. The same methods will suffice, but the background must be chosen much more carefully.

Look Around Home

Cleverly planned camera angles can do a great deal to disguise our artifice. For example, suppose you were one of those lucky people who traveled in Europe this summer, but that you came back without enough shots of yourself to prove you were actually there.

Now while there are plenty of spots in the modern parts of European cities that can be more or less paralleled in America, they are not the spots most American filmers would be likely to include in their pictures. On the other hand, an outstanding characteristic of many of the older cities there is the cobblestone paving of the streets.

And somewhere in most of America's larger cities you will find a few bits of cobblestoned paving that can double excellently as a European background for a downward-pointing camera angle. If American cars show up in this shot, it will still be all right, as long as their licenses are not seen, for Detroit motors, like Hollywood movies, are found everywhere.

Postcard for Locale

On the other hand, your predicament may be like that of one of my professional friends who, making a 35mm. color film on a rather short budget, found that he needed one panoramic long shot of Death Valley to complete his picture. His budget was too far gone to permit even a thought of going the several hundred miles

for that one shot, and besides, it was the wrong time of year for such a trip, since Death Valley is emphatically not a summer resort.

My resourceful friend simply bought himself a five-cent colored postcard of the view he wanted, put it on the easel of his title-board, and made his panorama by slowly sliding the card across the camera's field! On the screen the result was entirely successful.

Postcards as Title Stuff

Here's another professional trick that can bolster up ailing amateur films! Postcards can be trimmed to fit most amateur titlers, and if you choose cards which have no figures that ought to be moving you can add surprisingly to your travel films—even to shots where ordinarily there would not be enough light for cinematography, or scenes where amateur cameras are strictly forbidden.

Another 16mm.-shooting acquaintance of mine carried this idea one step farther. In his travels he confines his camerawork largely to intimate shots of the people he meets, and to candid shots of the native life in the places he visits.

For strictly scenic shots, he simply buys one of the commercially available travel reels of the place, reason-

pits, of the surfboard riders at Wai-kiki, and so on.

Every now and then the professional, like the amateur, may find he needs to make some "added scenes" showing a player who for one reason or another is no longer available. This, professionally, became front-page news after the recent death of one of our greatest stars, when the picture was posthumously finished with the star's stand-in filling a gap doubling for her in the long-shots.

This particular aspect of the problem is one the amateur fortunately has seldom to solve, but in a lesser degree other professionals have encountered similar problems and solved them with tricks the sub-standard filmer can copy.

Josef Von Sternberg, A.S.C., in making his first picture, "Salvation Hunters," hired an expensive actor for a single day to play the villain's role. When the day was done there still remained a number of scenes requiring this menace—but there was no money left to re-engage so costly a player. Luckily, Von Sternberg's profile was not unlike the actor's; and so Joe's shadow, projected on the wall by a spotlight, finished playing the part.

Don't Forget Yourself

Sub-standard filmers can't often do this, but they can frequently let the rear of one person double for the back of somebody else. One of my filming friends came back from a trip to Mexico City and discovered, apparently too late, that he had forgotten some needed shots of himself photographing some picturesque peons.

Nothing daunted, he called in one of his neighbors, draped him with a serape and sombrero brought from Mexico, and, training his camera on an innocuous stucco wall, made the necessary shots using his own face—and his friend's serape-draped rear elevation!

The number of African animals who have died on the screen from well-placed shots fired by heroic hunters six thousand miles away in California is something terrific. Yet as long as the hunter was actually in Africa to fire the fatal shot, it is relatively unimportant where he may have been when pictured doing so.

Therefore, if your films of your fall hunting trip show everything but how you fired when you bagged your deer, why not "stage" the shot for the camera when you get home?

After all, there's still a world of truth in the statement of the producer at whom Hollywood has laughed for twenty-five years, "A tree is a tree; a rock is a rock: shoot it in Griffith park!"



Daniel Clark, A. S. C.

ing that the professional cinematographer who made the reel would undoubtedly have better weather conditions than any average tourist could hope for.

Certainly, some of his films bear this out. I recall especially one reel on his trip to Hawaii, in which he intercut his own personal, intimate scenes with professional shots of the islands. Few if any amateurs traveling as he did could have equalled the purchased footage of Kilauea's fire



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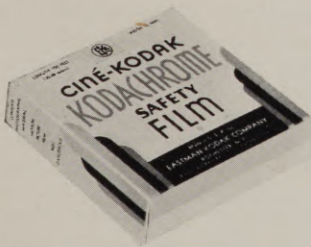
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EASTMAN KODAK COMPANY, ROCHESTER, N. Y.

GRACE MOORE IS KEEN FILMER OF INTIMATE SHOTS

Her 16mm. Pictures on Stage Show What Was Done and How

By WILLIAM STULL, A.S.C.

SEVERAL years ago John Arnold, A.S.C., and the writer were discussing the various studio folk who use 16mm. cineboxes. After running down a list that seemed like a "who's who" of filmdom, Arnold remarked:

"You know, we've got an opera star on this lot who could show a lot of our 16mm.-making old guard plenty of tricks in moviemaking. She's Grace Moore, of the Metropolitan Opera.

"The other day I dropped in on the set with my own Filmo, and instead of asking me what sort of a gadget I had in my hand Miss Moore came up and told me she had one, too—and began asking for very specific advice about some of her own movie-making problems."

In the years that have since passed Grace Moore has moved to another studio and become one of the industry's top-ranking songbirds. And every time I've seen a Grace Moore film I've wondered about her 16mm. filming.

At a recent A.S.C. gathering I ran

into Joe Walker, A.S.C., who is the perennial director of photography on the Moore filmusicals. In due course I asked him whether the star still followed the 16mm. hobby.

"I'll say she does!" replied Joe. "Whenever she was on the set during the making of 'I'll Take Romance' her 16mm. camera was very much in evidence. It got to be as much a part of the troupe as the 35mm. camera that was photographing the professional production.

Surmounts Silence Handicap

"What's more, she used real good sense in her sub-standard picture. Quite a few players have at one time or another tried to make 16mm. versions of the pictures in which they played. On paper, that's a swell idea; but in practice it has a lot of drawbacks.

"First of all, the studio's production is in sound, while the sub-standard version just naturally has to be a silent picture. Can't you imagine how disappointing a silent version of a Grace Moore film would be?

"Next, very few players—even

stars—work in every scene in a picture. Sometimes the player may be off duty for several days at a time while scenes that require only other members of the cast are made. And when you are on a production—especially when, like Miss Moore, you're starring in it—your own job makes such demands on your time and energy that you value those few days you don't have to report on the stage! Yet if your sub-standard camera misses the scenes made on your days off there are going to be some big gaps in your continuity.

"Finally, making a complete sub-standard version of a big studio feature would take an awful lot of film. A two-reel home movie is considered plenty long; a feature like 'I'll Take Romance' may run eight, ten or a dozen reels.

"Miss Moore hit on a really sensible way to get around these difficulties.

Digs Under Surface

"Instead of being a voiceless version of the studio production her 16mm. picture was a subject that showed how the studio film was made and who did it.

"I don't think everyone would have had that idea; but you might expect it of Miss Moore, for she is always more interested in people and their doings than in places or things."

That is just the sort of a picture it turned out to be. Instead of being a pale shadow of "I'll Take Romance" it is a colorful narrative of what goes on in a studio.

Of course, Grace Moore and the supporting players are seen, but the Moore 16mm. opus also shows the director of photography and his camera crew at their work; the electricians setting up lamps; the "grips," the property men, the recording engineers, the unseen but important musicians, the wardrobe and make-up persons, and all the dozens of unseen workers whose skill makes a major feature possible.

It is next to impossible to get Grace Moore to take credit for making this unusual home movie. Instead she insists that it is a real collective film. Whenever possible, she photographed the scenes herself; at other times her husband, Valentin Parera, who is also an enthusiastic filmer, officiated at the camera.

But this, she tells, was just the beginning. The camera was always on the set, and from the start it was understood that any member of the troupe who saw an interesting scene was free to take the camera and shoot that scene.

As a result, on the screen one may see in rapid succession a scene Miss Moore made of, say, the sound man, followed by other shots made by

(Continued on Page 441)



GRACE MOORE Films Make-Up Artist Jack Duffy and her hairdresser, wardrobe girl and maid for a scene in her 16 mm. film about those who made "I'll Take Romance."

AUTOMATIC DEVELOPMENT AND ITS ADVANTAGES

TWENTY-FIVE years ago all 35mm. professional motion picture negative and positive were developed by the "rack and tank" method, a system in which the film was wound on a rack and then inserted in tanks for the various processes of developing. Then it would be rewound off the racks on to a big drum that revolved until the film was dry. This was a long, laborious process that left much to be desired.

If in the process the laboratory technician forgot to take a rack of film out on time the picture suffered; or if it came out too soon it was just as bad. And then, too, there would be fingerprints, scratches, digs and dust added while the film dried on the big whirling drum.

Many more things happened due to the handling and rehandling of the film.

Today, except in the instance of one major manufacturer of 16mm. amateur reversible film who has perfected automatic machines for his own exclusive use, the majority of amateur film still is processed by the same antique method of early day movies.

For a long time it has been known in the trade in Southern California there was in operation a 16mm. automatic machine—for three and more years, in fact. Then last April Walter W. Bell, the manufacturer of the one just mentioned, began work on a second.

This was completed nearly three months ago and was installed in the plant of the Hollywoodland company, in South Gate, several miles from Hollywood. It has been in full operation and successfully ever since.

Automatic Operation

While these automatic developing machines usually are surrounded with genuine secrecy this reporter was given an opportunity through the invitation of Walter Bell and the courtesy of Ben Doty to see the newer one in operation.

These machines take the film in at one end, develop it first as a negative and then re-expose and redevelop it as a positive. Then the film is washed, dried, polished and wound ready to be run on the projector. All this is automatic and continuous in operation.

The newer machine is installed in

Story of Actual Operation of Machine That Processes Amateur Film Without the Hazard of Handling Injury

a room about 24 feet long, the device taking up about two-thirds of the space. In what is termed the "wet end" there is a large tank approximately 36 inches wide by 36 inches deep by 7 feet long. The tank is divided into nine compartments, each one accommodating the particular solution necessary in the processing of reversible films.

Suspended immediately above the tank by means of cables and counterweights was the mechanism that carried the film over a series of rollers through the various tanks. The mechanism contained nine separate units, one over each tank.

Each unit carried twenty rollers across the top and nineteen at the bottom. A drive shaft led down from the main frame to the bottom rollers of each of the nine units, and was so constructed as to drive the bottom rollers.

A continuous length of clear film leader was threaded over these rollers from top to bottom across each unit and then on to the next unit, and so on until it came out at the appointed end. By means of a gear this entire mechanism is lowered into the tanks, one unit into each of the nine compartments.

Completes Process

With the film and mechanism now submerged in solution a two-thousand-foot reel of exposed film is stapled to the end of the leader film, a switch is snapped on and the film is started on its way winding over and over through the first set of rollers in the first tank. It soon reaches the end of the first developer. Then it crosses over the last top roller and into the next tank, a wash tank.

On and on it goes, back and forth from tank to tank, until it has completed its run through the "wet end." Now, completely processed, it passes into the dry box, a completely inclosed glass case, 3 feet wide, 6 feet long by 7 high.

Here the film again passes over another series of rollers, there being four tiers in all. The thread-up in

this end is ample to allow the film to dry. By a driven take-up it is wound on a 2000-foot reel ready to have each roll separated and returned to the respective owners of each roll.

The machine is so arranged that it can run continuously until the entire day's work is done, provision being made to splice on additional reels of exposed film at the feed-in end without stopping. Likewise full reels can be removed and replaced with empty reels at the take-up end without stopping.

One of the "bugs" that had to be ironed out in the building of the machine was ascribed to the fact that acetate base film after being wet stretches from three to four feet to each hundred. With a thread-up of over 1000 feet in the wet end it may be easily seen some means of taking care of an additional thirty to forty feet of loose film must be made in the wet end of the machine.

Shrinks Back in Drying

During drying the film again must shrink back to its normal length, or pitch, so again in the dry box the mechanism must allow for this shrinkage or the film will break.

Previously we have mentioned the film is driven through the entire machine by the lower rollers and not the top rollers. In this lies the secret of compensating for stretch and shrinkage of the film. Immediately when the film starts to stretch in the wet end it tends to fall away from the bottom rollers, which naturally slows the speed of the film at that particular place.

This slack is then transmitted to the next rollers back, and so on, thus never allowing an undue amount of slack to accumulate in one place. The same process applies to the points where the film shrinks, for as it tightens the rollers drive to full speed identical to the speed it is fed into the machine before the film stretches, thus preventing it from breaking.

High pressure airvalves blow the excess solution off the film as it passes from one tank to another. Also air is used to dry the film, both emulsion side and back, before passing into the dry box. The result is that the finished film needs no polishing and is assured of being perfectly clean.

In the dry box, which is air tight,

the volume of air and heat can be regulated to dry the film correctly regardless of outside air conditions. Also all air entering the dry box is filtered through the latest type glass filters, insuring a spotless film.

Compensation for Error

Never is it necessary to touch the film from start to finish and scratches and digs cannot occur, for at all times the emulsion side runs away from the rollers, which are so constituted as not to touch the back of the film except for a narrow edge well within the perforation line.

Since the average amateur varies somewhat in the exposure of each individual scene on a roll of film it can be quickly realized that in the rack and tank process of development the laboratory man can only develop for the average best results. By machine processing it is possible to compensate for over and under exposure of each individual scene.

The re-exposure device, which directs a beam of light to the film as it passes into the second developer, can be varied with each scene, thus allowing more or less action by the second developer, which tends to even up the final density of the finished film, compensating for the amateur's errors in exposure to a great degree.

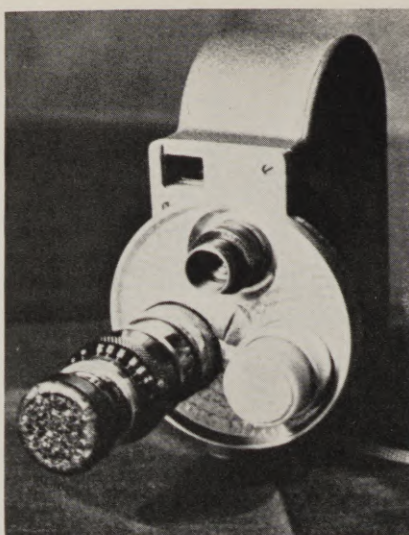
In other words, the machine processing system uses time and temperature fixed on both first and second development and control ultimate density and contrast by re-exposure, while by rack and tank it is necessary to vary first and second development since re-exposure in the laboratory is fixed to completion for the entire roll.

The machine that has been described is made to run both 16mm. reversible and double 8mm. reversible, provision being made to compensate re-exposure on both pictures of double 8, as two separate beams of light are used when running this type film.

The capacity of the machine is 2000 feet of film an hour. It can be operated by one man and an assistant. Aside from the superior quality of work resulting as compared with the rack and tank system the saving effected in time and labor is of vital importance.

650 Rollers

All metal parts that come in contact with solutions are made from a special type of acid-resisting stainless steel, while all gears, bearings and film rollers are fabricated from linen bakelite. Other parts, like the main frame and accessories, are made from duralumin, the same metal that is used in the construction of later type airplanes. Water and air pipe lines are of a special type copper tubing.



Front view of 8mm. camera fitted with three-lens turret. See page 429.

The machine has a total of 650 film rollers, and it takes 2050 feet of leader to thread it. Machines such as this are entirely custom built and must be engineered to meet individual requirements as well as to meet varying conditions in different parts of the country.

Since all solutions must be maintained to within a half degree plus or minus and dry box air to a given humidity, regardless of outside weather conditions, thermostatic controlled refrigeration and heat must be utilized to obtain such results according to the weather.

The foregoing may afford you a more or less brief description of the great care and thought that go into making your film a better film, to tell you just what happens to your film from the time you send it in for processing until the moment you receive it back.

Walter Bell, the manufacturer of the machine, as previously stated, is at work on an automatic developer for an 8mm. film. It is expected to be finished a week or two after this magazine is published. We plan to show a photograph of it at an early date.

Mr. Bell for twelve years has given his entire time to the amateur field. He is well known to a host in the industry.

Chinese Clamp Down

New regulations concerning the making of pictures in China applying particularly to travelers have been formulated by the Ministry of Interior and are awaiting the approval of the Executive Yuan, according to a report to the Department of Commerce by H. W. Howard, Assistant American Trade Commissioner, Shanghai.

The report stated that although at

the present time travelers in commercial airplanes are prohibited from making pictures of the territory over which they pass, the new restrictions will be extended to include all travelers whether journeying by land, air or water.

Visitors are forbidden to take pictures while in fortified zones and other specified military areas.

Moore Wins Contest

J. Kinney Moore, S.A.C., member and maker of "Nite Life," which was awarded a special prize for outstanding special effects photography in The American Cinematographer's 1936 contest, has received notice another of his films has carried off top honors in a national contest sponsored jointly by Liberty and Pete Smith's MGM short subject department.

His one-reel 16mm. production "Prize Winner" has been awarded premier honors in Liberty's contest and a cash prize of \$500. It is understood the Liberty contest was to secure material suitable for professional remaking as a Pete Smith short.

Da-Lite Has New Method for Glass Beaded Screens

Da-Lite Screen Company, Inc., Chicago, announces important improvements in the manufacture of its glass-beaded screens. A new method of applying beads to the surface of the screen provides more uniform distribution of the beads, greater smoothness, greater density of beads per square inch and perfect adhesion.

As a result of these improvements the reflected light is more diffusive and the picture is free from sparkle and glare. Graininess is eliminated. Color tones are brought out brilliantly and faithfully. Details are sharply defined.

The new process not only improves the quality of pictures but increases the life of the screen. The fabric stays white and pliable indefinitely. The beads adhere tightly and are guaranteed not to shatter off, even when exposed to excessive humidity.

Da-Lite glass-beaded screens are available in many styles—box type table models, hanging wall screens and the popular Da-Lite Challenger, which has a tripod attached to the case and can be set up instantly anywhere.

Da-Lite, with more than a quarter of a century of experience in making screens for all requirements, recommends the glass-beaded surface for most users but also makes screens with mat white and silver surfaces for special requirements.

CUT, BROTHERS! CUT WITH CARE!

How the Unsocial Crew of
Cinematographer, Director,
Producer and Film Editor
May Operate as One Human

By WILLIAM STULL, A.S.C.

ONE of the hardest parts of amateur moviemaking is the fact that most of us have to be Cinematographer, Director, Producer and Film Editor all rolled into one. On paper, this combination looks nice enough. In practice, it can be plain, unadulterated Gehenna, for each of these four divided interests is inclined to pull in a different direction.

The conflict is often at its worst when we come to the matter of cutting a picture. Judging by most of the results seen on home movie screens, the editorial member of this one-man quadrumvirate seldom yells half loud enough. In other words, the "special interests" of pet scenes, pennywise film hoarding, and so on seem to dominate the job to the detriment of the whole.

I wish I could cite some magical formula that would paralyze the three selfish Messrs. Hyde so that the Editorial Dr. Jekyll could work undisturbed. The nearest approach is a clear understanding of what film editing really is, and how vital to the success of any picture.

Make Story Behave

Basically, the film editor's job is to make the story behave. His shears must keep the film's story in the straight and narrow path and get out of it every bit of cinematic force it possesses.

And now we've brought up that point of stories, don't shy off just because your own film doesn't happen to be of the dramatic variety: it has a story none the less. Every film has, whether it's Cecil DeMille's latest effort or the newest Univex-toting novice's maiden roll of 8mm.

Perhaps you don't consciously call it a story, but it is one in spite of you. It is the fundamental idea your pic-

ture is trying to get over to the audience. It may be an idea about places or scenery; it may be an idea about people; it may be an idea dealing with some fact or operation. But every film is always trying to tell the audience something—and that something is the story.

The starting point of any job of editing is to eliminate the purely mechanical defects like fogged frames, out-of-focus or badly exposed shots, and to assemble the scenes in continuity.

Lots of otherwise discerning filmmakers stop right there and consider their job of editing done. And that, brother, is one whale of a mistake, for the real work of editing is only begun! After all, what right have you, as Editor, to trust that you as Cinematographer and Director have made each scene absolutely perfect?

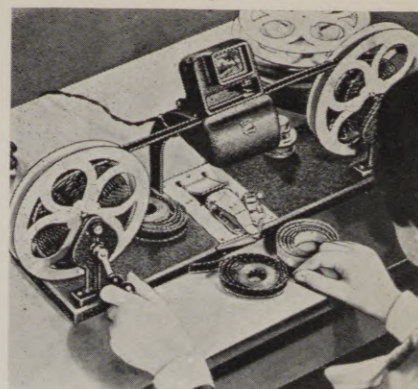
If you were cutting someone else's efforts, you know very well you'd begin hunting flaws at this point. Well, try it out on your own films.

With the picture assembled this way, in what the professional calls the "first rough cut," you can begin to analyze it. Run it and rerun it, studying each scene to see if it really helps the picture's basic idea to move forward. If it doesn't, out with it! The film will be stronger without it.

Give "Sneak Previews"

About here, you will, if you deal honestly with yourself, begin to see those pet scenes going. At least those pet shots of which we all make two, three and four takes, differing only in some minor detail of filtering, exposure, or the like. A good scene rarely needs to be repeated; and such repetition almost always weakens the effect of good camerawork.

Next, make sure that you have



every scene necessary to get your idea over to the audience. If you haven't, and you can do so, make those missing scenes. Remember that the audience can judge only by what it sees on the screen; it can't jump the gaps as your mind does, for the audience won't be fortified with your knowledge of the subject.

At this stage of the game I have found it a good idea to give the picture one or two "sneak previews" before various friends. By friends I mean people who know you well enough to be frank, and who know enough about filming to criticize constructively. In preference, too, pick friends who know little enough about your subject so their minds won't parallel yours in skipping across unnoticed gaps in continuity.

These "preview reactions" should furnish a good idea of how to proceed in finishing the job. They will point out gaps to be filled by added scenes or (if no retakes are possible) bridged by titles. They will unhesitatingly let you know if anything is not clear.

At last comes the most critical stage of the whole editorial job: editing for tempo.

Approach of the Storm

This is something you just can't govern by any known rules, for each picture makes its own requirements. There are, however, some pretty well established facts which can be followed universally. Long scenes and relatively few cuts will give almost any action a slow tempo.

Short scenes and quick cuts will give a fast tempo, especially if the cuts are to and from a variety of angles. Long shots of almost anything tend toward a slower tempo; closer shots to a faster tempo, increasing as the camera approaches the subject. Combine these fundamental principles, and you have the whole secret of filmic rhythm.

Putting it into practice is not hard once you've grasped these fundamentals. One example comes immediately

to my mind as I think of this: A picture made by Paul Burnford in England, which won a prize in the American Cinematographer Contest two years ago.

Basically, all he had was a collection of photographically good shots of the English countryside under various conditions—cloudless calm, an increasing breeze, rising clouds, strong wind, and a rainstorm. Half at least of the film's success could be laid to the cutting.

Burnford began with long, slow long shots of the placid landscapes, and then came some slightly shorter scenes of the same and similar landscapes with billowy clouds piling up.

Then—in increasingly short cuts—were shots of the grain fields rippling in the freshening wind, shown in closer and closer shots; then closer shots of branches waving in the gale. Next, there was a close shot of the once placid surface of a pond as the first raindrops pattered down, followed by closer and shorter shots of the rain falling.

Planting the Idea

In increasingly close angles and shorter "flashes" shots of the angry surf dashing against the rocks build up to the climax. As the storm passes, the scenes grow longer and longer, with the angles retreating more and more into the slower-paced long shots. Even the scenes of the surf, now subsided to a slow ground swell, increase in length and slowness in tempo, until once again we see the placid countryside, revealed in long, restful long shots.

Of course there are innumerable variations in the way these principles can be put to work. For instance, in a documentary film, things you want especially well understood can best be told in long scenes, with some repetition.

You can often begin with long shots to "plant" the idea, and then elaborate on it with close-ups which are allowed to run more than ordinarily long. Conversely, if in any sort of a picture you want to portray the idea of confusion quickly, do it with a quick succession of very short shots from a variety of angles.

Shorten the Scenes

Lastly, these tricks of cutting can help you give tempo to scenes and sequences that lack it. For example, many a scene can be synthetically sped up by simply cutting the exits and entrances of the characters closely—in one case, cutting before the player is out of the picture; even as he starts to go; in the other, cutting when he is well into the picture, so he has less vacant space to cover before starting important action.

In the same way, you can "pep up" movement by quicker cutting. Per-

haps the slowest-looking thing in a picture is a big airliner shown in a long shot, even though it really travels at 200 miles an hour. Suppose you have two or three of these longshots. Alone, they are disappointing.

But break each one up into two or three shorter scenes, and intercut a lot of short angle-shots (made on the ground) of whirling propellers, of the long, lean nose of the ship; of the airspeed indicator, cloud shots made in the air, and so on—and you will have a sequence which really seems to move at 200 miles an hour!

In other words, once you start working for yourself as Film Editor,

earn your pay! Put the editorial foot down hard upon the Director and Cinematographer who urge that this shot or that be retained because of its pictorial beauty or personal interest, and upon the Producer who hates the thought of throwing away film for which he paid his good money. Remember that the audience—even though a non-paying one—is the ultimate judge of any film, and that audiences can only judge by what they see on the screen.

See to it that they see what you, as Director, Cinematographer and Producer want them to see—and you, as Editor, will have done your job well.

ONE AMERICAN CONCERN GETS BULK OF LIMITED BRAZILIAN BUSINESS

BRAZIL affords a relatively limited market for amateur motion picture equipment, and possibilities for any material expansion in demand do not appear to be particularly encouraging, reports Trade Commissioner J. Winsor Ives, at Rio de Janeiro. The limited spending power of the great bulk of the country's population has tended to limit materially the number of people who are in a position to pursue this hobby.

Furthermore, amateur photography has not gained the degree of popularity which is found in the United States and many other countries of the world.

This fact is evident from a statement made by the local manager of the sales branch of a well-known American camera manufacturer to the effect that annual sales of sub-standard motion picture cameras in the

Argentine, which has a population of less than one-fourth of Brazil, are over three times greater than in that country. This is confirmed by U. S. export statistics for 1935, which show that shipments to this market amounted to only 5 units whereas those to the Argentine totaled 53 units.

A survey of the market indicated that one American and one French, (Pathe) manufacturer supply a majority of the limited number of 8 and 16 mm. motion picture cameras and projectors sold in the market annually. During the past year a German firm introduced a 16 mm. camera which has not enjoyed particularly favorable reception. It is estimated American made 8 and 16 mm. cameras account for approximately 80 per cent of the sales.

The greatest deterrent to the sale of amateur motion picture cameras through ordinary distribution channels is the lack of suitable developing and editing facilities, both of which services are afforded by the sales branch of the large American manufacturer now established here.

Mrs. Akeley in Canada for Scientific Research

Mary L. Jobe Akeley, widow of Carl Akeley, famous naturalist, African explorer and camera designer, is undertaking scientific work in British Columbia, a region in which she previously spent many years and where the Canadian government named a lofty mountain, Mt. Jobe, for her distinguished achievements in mountaineering.

With her goes a Leica camera equipped with a 50mm Summar and a 135mm Hektor lens with which she will make still pictures for illustrating another book to add to her previously published ones.

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HOW FILMS AID IN ADVERTISING

Caterpillar Tractor Large User of Photo Equipment in Sales Boosting

EVERY year Caterpillar Tractor Company prepares a series of one and two reel films, most of which are made for the express purpose of selling Caterpillar products. Usually, in this group are included one or two films which are of a more general interest, and which are supposed to be more entertaining than selling pieces.

The pictures are prepared in two ways. Free lance cameramen from all parts of the world submit film to the company on a speculative basis. From this footage is selected any which might have a definite use in the films being prepared at that time, or in any film planned for the near future.

When there is a particular story in mind these various sequences are screened, and those which illustrate the point to be made in the story are selected and assembled.

There may at that time be several thousand feet of film available to tell the desired story, and it then becomes a question of editing the footage to make the smoothest flowing story possible with the minimum number of scenes necessary to make transitions from one sequence to another.

The other method of producing pictures is to prepare the entire story beforehand, write a working script on it and delegate the company cameraman to shoot it, scene by scene. For example, when a picture was needed on a new product (the Caterpillar Auto Patrol) locations were selected for the various sequences in mind, the script was prepared, and the entire picture filmed by the company's own cameraman.

Array of Lenses

Caterpillar Tractor is completely equipped in this respect. A Bell and Howell studio camera, equipped with Mitchell finder, sun shade, filters and all accessories, as well as an Akeley tripod, form the nucleus of the outfit.

In addition to that, there is an Eyemo camera for use in making all odd and unusual angle shots. The

Eyemo uses the customary F2.5 Taylor-Hobson-Cooke lens, and the big camera is equipped with a 1½-inch Taylor-Hobson-Cooke F2 lens, a 47mm Taylor-Hobson-Cooke F2.5 lens, a 3-inch Taylor-Hobson-Cooke 2.5 lens, and a 6¼-inch Taylor-Hobson-Cooke F3.5 lens. There are also three 400-foot magazines with the outfit.

Occasionally, the company photographer and an assistant are sent to territories where there are no regular contributing cameramen. In these cases, both motion pictures and 8 by 10 stills are obtained, covering all phases of jobs visited. A special camera car is provided for such trips.

Record the Film

Recently a 13,000-mile trip of this sort was included. Thorough coverage of Missouri, Kansas, Oklahoma, Texas, Louisiana and Arkansas was obtained. With the aid of an assistant about 500 acceptable stills and nearly 15,000 feet of 35mm motion picture negative

were obtained in approximately three months' time.

Naturally, the company cameraman, being more familiar with "Caterpillar" products, is better able to illustrate certain features of the product than is an outsider. However, many of the free lance photographers, who have been making pictures for the company for many years and who are in close contact with the machines in their own territories, are able to get fine material concerning strictly seasonal jobs.

After the work print is completely edited a very carefully written narration is prepared, a good narrator is selected and the film is recorded.

The laboratory then prepares sound prints which are placed in the hands of the sales development division. This division has previously scheduled one and two day schools or shows at the place of business of each of the domestic distributors in the Caterpillar organization.

The motion pictures are supplemented by one or two slide film-illustrated lectures as well as numerous cut away models of the various products manufactured by the company. Seven different crews, equipped with large trucks, carry the sound equipment, films, cutaways, etc., to the distributor's organizations in all parts of the United States.

At that time 16mm sound-on-film prints and 16mm silent titled prints of all subjects are made available to any of the dealers and distributors who have projects and who use them in their sales work. Most distributors have 16mm silent projectors, and in



Caterpillar orchard model 22 and three-section spring tooth harrow cultivating cherry orchard. Photo by Fred Jolly.

the past few years a great many of them have changed over to sound.

Forty Films in Three Years

That these pictures are put to an aggressive and profitable use by the salesmen is proved by the fact that in the company's files are many letters stating that actual sales running into many thousands of dollars were directly traceable to the use of motion pictures.

It is impossible to put on a demonstration of a tractor and snow plow working in a snow storm in the middle of summer, but it is a simple matter to set up a 16mm projector and show the prospect exactly what a tractor and snow plow will do.

Caterpillar Tractor has made available to its distributors nearly forty pictures in the past three years. These pictures are on such subjects as snow removal, general farming, good orchard practice, farming in the wheat belt, the simplicity of the Diesel engine, Southern logging, Western logging, road maintenance with the Auto Patrol, earth moving, stationary engines, soil erosion control and numerous other topics of general interest.

That the intelligent use of motion pictures and still shots has been a factor in the company's rapid growth is an acknowledged fact. Certainly it has proved itself well worthwhile, for every year new pictures are planned and produced by the company.

By the Sounding Sea

(Continued from Page 405)

nized was doing the examining. Well, here's where we'd find out if there were any romance behind this U.S.A. man on a Mexican police force. So we crossed the street, still under scrutiny, but with our hands very carefully swinging free and avoiding any appearance of possible belligerence.

"I've got a crazy idea you're an American," said the reporter as he came up to the cop. "No," was the answer, after a slight pause, but with no lessening of the chill in the eyes, "Mexican." There was a casual chat of a moment or so and the two separated.

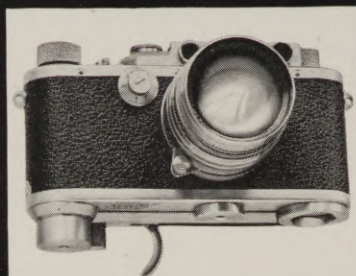
Oh, well, it would have been a good story had the hunch been right.

UNDERSTATEMENT

COMING home Labor day there was a stopover for an hour at Laguna. Looking with keenly interested eyes in a window of an artist's store the missus was invited by a charming woman to come in and wander around. There was prompt acceptance.

The young matron proved to be Joane Cromwell, the artist of marine, landscape and portraiture who creat-

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ed the many fine examples of painting on the walls of the studio. Noting this reporter admiring a striking reproduction of a towering snow crested mountain, with the floor of the adjacent valley seemingly thickly carpeted with Spring's most gorgeous desert flowers, somewhat whimsically she declared:

"That's old San Jacinto. Really it is not a too faithful portrayal of the model. Had I included in my subject all the snow at the time on the crest and all the flowers that crowded about its base I would have been accused of exaggerating the fact."

"Mighty interesting," was the response. "So the artist sometimes is

like the writer who chooses to pipe down on his facts in order his story may be convincing rather than tell the truth and see his tale discredited."

The artist has been commissioned to reproduce on canvas all the mis-sions on the coast.

KIPLING DUG FOR FACTS

Rudyard Kipling was another writer cheated by death from seeing on the screen one of his favorite brain children, "Captains Courageous." The story was written about 1895, when the author was thirty years old and already easily in the first ten writers in the world. Mark Twain was one of the first to recognize and acclaim his greatness—and Mark then was just double the age of Kipling, with the most of his work done.

Kipling's story of the fishermen, the Gloucestermen, was no potboiler. He dug deep for his facts, visited Gloucester, aided by a friend who years before had been a member of the Gloucester fleet. He visited T Wharf in Boston, patronized sailors' eating houses, studied charts and dug up old tales.

Before Kipling went to sea on a Gloucesterman he attended the annual memorial service held in one of the churches in Gloucester, dedicated to the men of the town who had failed to return. There were many lost every year. MGM has softened the roughness of the service on its harrowing side, which of course in no way will militate against its entertainment value.

In other days, as this writer saw it on one memorable occasion in his boyhood, before the schooners had the sharp lines they carry today, the calling of a name from the roll might be followed by a sob or a scream.

Gloucestermen Are Heroes, Too

Gloucester had its heroes in real life, too. One of these was Howard Blackburn, doryman lost from his ship in the fog. He knew he must keep moving or freeze. He knew if he exposed his hands he would lose them if by any slim chance he saved his life. He accepted the alternative of letting his hands freeze on the oars. After many hours he rowed ashore. The hands were amputated.

The Seamen's Aid Society advanced Blackburn \$500. With the money he opened a saloon—and prospered. In the course of time he authorized the writing of a check for \$500, for return to the society.

It fell to this writer, then a lad of seventeen, combined foreman, make-up, head-setter, ad-setter, copy cutter for five girl compositors—one of them

to become the mother of a son later as a battalion commander to be killed at the Hindenberg Line—fireman for the upright boiler and pressman for the old one-cylinder Hoe press, to accompany Herb Nichols, the combined editor, reporter—and what a reporter that man was, what a nose for news and a wit to extract it from an unwilling witness—and mailing superintendent while he “covered” the function.

One of the WCTUers made a militant objection to accepting money that had come from a saloonkeeper. The riot was on. There were plenty to stand with the WCTUer. As the temperature rapidly ascended Dr. Albert Ryder secured the floor. The doctor was more than a minister of the town. He was more than a man of God. He was a man of men, a chaplain of a state guard regiment, a good sport, meaning perhaps an ability to see two sides of a question, and an orator in the best sense.

The drama and the excitement were heightened by the manner of the doctor, as at first without uttering a word he surveyed the members of the audience, looking from one to another. Slowly and quietly he began his attack on the WCTUers and their sympathizers.

He pointed out that Blackburn had adopted the only means he knew to make a living, how he had succeeded beyond expectation, how he won the esteem of the citizens, and declared his belief that in the sight of Christ this man's money was as good as an-

other man's. He said some other things, too, as he warmed to his rather large subject.

The society accepted the check for five hundred—with thanks.

‘ANGEL’ IS SMART

TO those amateurs as well as professionals who enjoy sitting in on a well-made picture, one that has class in every department and particularly in the writing, directing and photography, may we commend to their attention Paramount's “Angel.” It has upon it the stamp of Ernst Lubitsch, his indelible stamp if you wish. It was adapted by Samson Raphaelson, another veteran. It was photographed by Charles Lang, Jr., A.S.C., and the special photographic effects came from the hand of Farciot Edouart, A.S.C.

Here is the cast which superbly interpreted the rarely clever lines, the lines of literary quality: Marlene Dietrich, Herbert Marshall, Melvyn Douglas, Edward Everett Horton, Ernest Cossart, Laura Hope Crews, Herbert Mundin, Ivan Lebedeff, Dennie Moore, Lionel Pape and Phillis Coghlan.

Just to indicate the length to which the director has gone to secure the “class” to which reference has been made Eddie Horton plays a dead pan valet. And how!

Show Televised Subjects on Full Theater Screen

Daily Variety, in a telegram from London, announces Gaumont-British secretly has shown televised subjects on a full-sized screen. G. B., it is stated, controls the Baird Television Company, which it may be assumed is the same organization which in former years first was known to American film men as the manufacturer of a topnotch projection machine.

Minor technical results remain, it is declared, but it is claimed by those who have seen the reproductions the screening is as steady as film projection and nearly as clear.

Grace Moore Keen Filmer

(Continued from Page 434)

Stillman Irving Lippman showing how the sound engineer placed the “mike” in position to catch Miss Moore's singing, and finally an unusual angle-shot made by an electrician who spotted a good scene from his position high over the set on the lamprail.

Much Kodachrome

According to Miss Moore, this lent an interesting tang of adventure to the affair, for until a roll of film came back from the laboratory she often had very little idea as to what was on the film. At times, she admits, she got some surprises, as for instance the day when the wife of one of the technicians worked on the set as an extra—and the 16mm. “rushes” showed an amazing number of close-ups of that particular extra!

A large proportion of the footage of this film is in Kodachrome, and is surprisingly effective. Theoretically, it would seem as though a studio set lit for today's Super-X film, which is so much faster than any color film, would not be adequately illuminated for color filming.

In practice, however, this did not hold true, for the difference between the f:2.7 lenses and 170-degree shutters of studio cameras and the f:1.8 lens and 216-degree shutter of the Filmo is sufficient to equalize the difference in actual film-speeds.

So successful are Miss Moore's

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RINGING IN HEALTH

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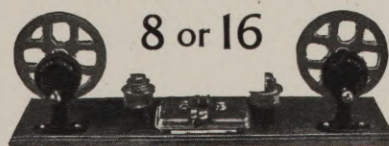


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One Thousand Dollars In Prizes

\$500 Cash \$500 Equipment

THERE WILL BE A GRAND PRIZE OF \$200

When the contest announcement in the September issue made this figure read \$500 it was an error, as may have been realized by those who had read the correct statement in the preceding announcements of June and July. Also it may have been indicated by the context, which correctly and as usual read as follows:

There will be six other cash prizes, of \$50 each, for, respectively,
Photography, Color, Scenario, Home Movie, Educational, Scenic

The Contest Ends Midnight, November 30 Next

No Entrance Fee—Original Films Only—No Dupes—No Reduction From 35mm

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Open Only to 8mm or 16mm amateurs
or amateur clubs

In the event of a tie prizes of equal
value will be awarded to tying
contestants.

If you intend to enter please
send coupon printed on
this page for official
entry blank

AMERICAN CINEMATOGRAPHER

1782 No. Orange Drive
Hollywood, California

Please send me one of your official entry blanks.
I intend to enter a (16mm 8mm) picture in your
1937 contest. I understand my entry must be in
your office not later than November 30, 1937.

Name.....

Street.....

Address.....

Among Equipment Prizes Will Be—

VICTOR ANIMATOGRAPH CORPORATION

Model 11 Victor Master Silent Projector (complete with carrying case). Optional credit will be issued in sum of \$147 against purchase of Models 4 or 5 Victor Camera, any model Victor Sound-on-Film Animatophone, Model 22 Silent Victor Master Projector.

BELL AND HOWELL

Will award \$100 in merchandise to be selected by contestant adjudged maker of film best in photographic technique and made entirely with Bell and Howell cameras, either 8mm. or 16mm.

WESTON ELECTRICAL INSTRUMENT CORPORATION

Contributes without reservation as to the character of the film submitted one Weston Cine Exposure Meter, Model 819.

AGFA ANSCO CORPORATION

Six 100-foot rolls Agfa 16 mm. Hypan Reversible Film and six 100-foot rolls Agfa 16mm. Fine-Grain Plenachrome Reversible Film. The rolls of Hypan are to go to the person winning the highest award and using Agfa Film for it. The Plenachrome rolls are to go to the next highest prize winner who takes his prize-winning picture on Agfa Film.

MITCHELL CAMERA CORPORATION

Astro f:1.8 20mm. lens, to be awarded at the discretion of the judges.

HARRISON AND HARRISON

To the maker of the best 8mm. or 16mm. color picture a Harrison Color Meter in leather case, complete with six 1¼-inch meter-matched filters in leather filter-fold.

Kodachrome scenes, at any rate, that they are said to be in a great measure responsible for her insistence that her next studio production be photographed in natural color.

Stillman Lippman, who was Miss Moore's chief 16mm. assistant on her last picture, verifies the reports of her photographic ability. "When she started bringing the camera to the studio," he says, "both she and her husband were better than average amateur photographers.

Seeks Expert Advice

"All through the picture she kept after all of the photographic crew for advice and coaching. And now we're all of us ready to certify that both she and Parera are able to hold their own in mighty near any moviemaking company.

"And in one respect especially they're streets ahead of most amateurs. Instead of concerning themselves mainly with shooting scenery or purposeless shots of people looking uncomfortable in front of the camera, they get shots of people—and have the people doing something natural and interesting.

"Miss Moore is an inveterate traveler, you know, and if she made her films in the ordinary way the pictures of one trip to her Riviera villa would be pretty much like those of every other trip. But on each trip she brings back new and interesting shots of prominent people she has met—royalty, statesmen, great artists and famous musicians—rather than mere scenery.

"Those pictures are the really worthwhile ones: a motion picture album of living memories. Of course not everyone can make intimate movies of these people; but if more home moviemakers would use their cineboxes the way Grace Moore does, remembering to get plenty of intimate scenes of the interesting people they meet, vacation movies would have a much longer lived interest.

"After all, vacation films are supposed to capture the things we want to remember—and human beings give us more memories than scenery. So why not film human beings?"

Philadelphia Cinema

(Continued from Page 428)

Foundation directing and photographing sociological and teachers' films for two and a half years, has lectured to Binghampton Movie Club as technical director, to New York Telephone Camera Club, Mount Kisco Movie group, Photoplay class at New York University and others.

In his talk on the subject of editing, as applied to amateur cinematography, Mr. Space stressed the fact

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that good editing really shows the difference between the work of the amateur and the professional. He called attention to the fact that the use of maps in amateur films goes a long way toward establishing the locale, which otherwise is left to the imagination. He pointed out how maps can be tied in to the film and used most advantageously.

The tie-in between lighting as applied to industry and lighting as applied to the taking of the picture to illustrate it brought up some interesting discussions. Mr. Space joined with the other members of the club to discuss and criticize this particular film.

R. M. Hoot, president of the club,

BELL AND HOWELL 170° CAMERAS—High speed shuttles—high speed gear boxes—400 and 1000 foot Bell & Howell magazines—Bell & Howell tripods—motors. **AKELEY and DEBRIE CAMERAS.** Akeley motors. High speed motors. Sunshades, lenses and finders.

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WANTED: We pay cash for everything photographic. Send full information and lowest cash prices. **Hollywood Camera Exchange, 1600 Cahuenga Blvd., Hollywood, Calif.**

WANTED—Used 12 volt electric motor for Eyemo and modern Eyemo tripod. Box 270, American Cinematographer.

OPTICAL PRINTER for 16 mm trick work, new or used, send price and description. **A. Borrás, Bustleton, Pa.**

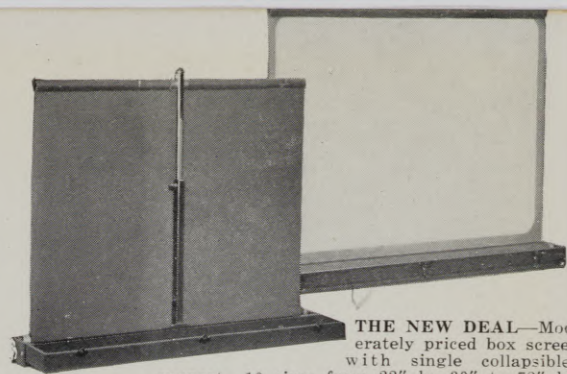
exhibited his two-reel Kodachrome covering industrial lighting, and its benefits as applied to industry. The film was done by Mr. Hoot to indicate particular emphasis on the angle of lighting as applied to industrial work.

Ripley W. Bugbee had another one of his gorgeous color symphonies called "The Flower Garden," which was exhibited with an appropriate musical background.

Films for the Fall Contest will be seen beginning with the October meeting. All members are requested to present films as promptly as possible to the Committee.

B. N. LEVENE,
Chairman of Publications Committee.

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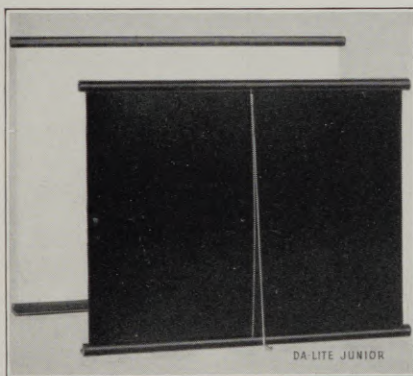
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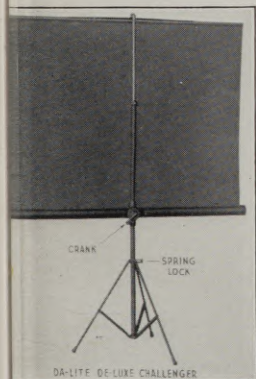
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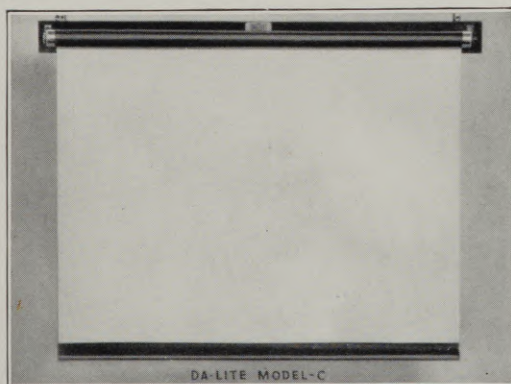
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